

Strategic Bushfire Study

Sir Moses Montefiore Jewish Home

116-120 High street, 2-20 Gaza Avenue
and 45-47 Barons Crescent, Hunters Hill

Prepared for
Sir Moses Montefiore Jewish Home



Version 1.3

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1. Glossary

This section defines those core terms and concepts which are adopted throughout the body of this report.

Term	Definition
Asset Protection Zone (APZ)	A fuel-reduced area surrounding a built asset or structure which provides a buffer zone between a bushfire hazard and an asset. The APZ includes a defendable space within which firefighting operations can be carried out. The size of the required APZ varies with slope, vegetation and FFDI.
Bushfire	A general term used to describe fire in vegetation, includes grass fire.
Bushfire attack mechanisms	The various ways in which a bushfire can impact upon people and property and cause loss or damage. These mechanisms include flame contact, radiant heat exposure, ember attack, fire wind and smoke.
Bushfire Attack Level (BAL)	A means of measuring the severity of a building's potential exposure to ember attack, radiant heat, and direct flame contact. The BAL is used as the basis for establishing the requirements for construction to improve protection of building elements and to articulate bushfire risk.
Bushfire Design Requirements	A separate design document to assist the master planning with requirements and specifications to provide compliance with PBP 2019.
Bushfire prone land (BPL)	An area of land that can support a bushfire or is likely to be subject to bushfire attack, as designated on a bushfire prone land map.

Bushfire Hazard	Any vegetation that has the potential to threaten lives, property, or the environment.
Strategic Bushfire Study (SBS)	Provides the opportunity to assess whether proposed new development is appropriate in the bushfire hazard context.
Bushfire Threat	Potential bushfire exposure of an asset due to the proximity and type of a hazard and the slope on which the hazard is situated.
Hazard	A hazard is any source of potential harm or a situation with a potential to cause loss. A hazard is therefore the source of risk.
Managed land	Land that has vegetation removed or maintained to a level that limits the spread and impact of bushfire. This may include developed land (residential, commercial, or industrial), roads, golf course fairways, playgrounds, sports fields, vineyards, orchards, cultivated ornamental gardens and commercial nurseries. Most common will be gardens and lawns within curtilage of buildings. These areas are managed to meet the requirements of an APZ.
Mitigation	The lessening or minimizing of the adverse impacts of a bushfire event. The adverse impacts of bushfire cannot be prevented fully, but their scale or severity can be substantially lessened by various strategies and actions. Mitigation measures include engineering techniques, retrofitting and hazard-resistant construction as well as on ground works to manage fuel and separate assets from bushland.
Planning for Bushfire Protection 2019 (PBP)	NSW Rural Fire Service publication effective from 1 March 2020 which is applicable to all new development on bushfire prone land in NSW.
Resilience	The ability of a system, community or society exposed to hazards to resist, absorb, accommodate, adapt to, transform and recover from the effects of

	a hazard in a timely and efficient manner, including through the preservation and restoration of its essential basic structures and functions through risk management. UNDRR 2017
Risk	The degree of risk presented by that interaction will depend on the likelihood and consequence of the bushfire occurring. Risk may be defined as the chance of something happening, in a specified period of time that will have an impact on objectives. It is measured in terms of consequences and likelihood.
Risk assessment	A systematic process of evaluating the potential risks that may be involved in a projected activity or undertaking, having regard to factors of likelihood, consequence, vulnerability, and tolerability.
Risk-based land use planning	The strategic consideration of natural hazard risk and mitigation in informing strategic land use planning activities.

2. Executive Summary

Blackash Bushfire Consulting has been engaged by Sir Moses Montefiore Jewish Home for the proposed Planning Proposal (PP) at 116-120 High Street, 2- 20 Gaza Avenue and 45-47 Barons Crescent, Hunters Hill (the site) which is at Figure 1.

Gateway Determination was issued by the Department of Planning, Housing and Infrastructure for Planning proposal (Department Ref: PP-2023-1109) on 23 April 2024 with conditions.

The site is affected by the vegetation buffers from Bushfire Prone Land from a narrow remnant Category 2 Bushfire Prone Land to the north east of the site and the buffer from Category 1 Bushfire Prone Land to the south of the site. As such, NSW Ministerial Direction 4.3, titled *Planning for Bushfire Protection*, is applicable to the PP and Chapter 4 of *Planning for Bushfire Protection 2019* applies to the PP. The proposed PP is able to meet the requirements of these provisions.

The site is comprised of 18 lots forming a total area of approximately 4 hectares and located between High Street and Barons Crescent, Hunters Hill. The site contains the Sir Moses Montefiore Jewish Home (Hunters Hill) and features an aged care facility and independent living units. Aside from the property at No. 2, the lots fronting Gaza Avenue are all owned by Montefiore and are leased primarily to staff associated with Montefiore.

The PP seeks to amend the current LEP to allow for greater heights and FSR on certain parts of the site. Although not technically required to facilitate seniors housing on the site (noting that seniors housing is permitted under the existing zoning), the PP also seeks to establish an 'SP2 Infrastructure' zoning across the site aligning with the historical, current and future intended use of the site.

Preliminary master-planning has identified that redevelopment of the site in accordance with the PP does not seek to increase the FSR or height associated with the existing residential aged care facility, rather it seeks to reduce the facility from its existing 334 beds to 194.

Preliminary master-planning has identified that redevelopment of the site in accordance with the PP would result in the reduction of aged care beds from 334 to 194, thereby significantly reducing the number of more vulnerable residents on the site. This master-planning also shows the potential to increase the number of ILUs from 18 to approximately 118 in positions that improve upon the existing fire source/hazard as well as locating ancillary services on the site ((including administration, communal facilities and staff housing) in locations that meet the relevant modelled APZs.

More detailed master-planning and design will be conducted as part of the preparation of future development applications.

The PP was lodged, and a response was received from the RFS (Appendix 5) dated 31 May 2024 that included:

The proposal as a rezoning from R2 low density residential zone to SP2 Infrastructure (Seniors Housing) is required to demonstrate how the land can comply with Sections 4 Strategic Planning and 6 Special Fire Protection Purpose Developments of Planning for Bush Fire Protection 2019. The rezoning needs to demonstrate compliance with the setbacks for a new Special Fire Protection Purpose development as the existing use under Section 6.4 Development of existing SFPP facilities of Planning for Bush Fire Protection 2019 is not a consideration for a rezoning.

The PP is able to meet the bushfire requirements.

3. Introduction

Sir Moses Montefiore Jewish Home (Montefiore) (the Proponent), requested a Rezoning Review of Planning Proposal 2023-1109, submitted to Hunters Hill Council (the Council) on 26 May 2023, as amended, pertaining to land at 116-120 High Street, 2- 20 Gaza Avenue and 45-47 Barons Crescent, Hunters Hill (the site).

Montefiore is one of Australia's leading aged care providers, offering support to older members of the community through independent living and aged care at various locations around Sydney. The Hunters Hill site has been owned and managed by Montefiore for independent living and aged care purposes since 1939. The existing facility has undergone significant upgrading and refurbishment over the years.

The PP presents an opportunity to increase the diversity of residential accommodation options within Hunters Hill (specifically options relating to the seniors housing). The PP responds to a strong market demand shaped by an ageing demographic looking to downsize and remain in the local community and will also help free up existing housing stock in the Hunters Hill local government area and surrounds. It allows residents to 'age in place' and benefit from the care services already provided on the site.

This PP, seeks to amend the *Hunters Hill Local Environmental Plan 2012 (LEP)*, by way of the following:

- Change the zoning of the land from R2 Low Density to SP2 Infrastructure (Seniors Housing).
- Increase the maximum height control from 8.5m to 16m, 18m and 24m (allowing for 2 and 4 storey buildings at the Gaza Avenue and Barons Crescent frontage and 2 x 6-storey buildings in the centre of the site).
- Consolidate the FSR control for the properties fronting Gaza Avenue from 0.5:1 to 1:1.

The proposed zone seeks to provide both Council and the Community with certainty of the delivery of seniors housing. The amendment to the existing height and FSR controls will allow a planning framework for future development applications to follow.

A draft Masterplan supports the PP (Figure 2). Although the exact type and mix of future seniors housing is yet to be determined for the site (including the number of aged care beds), the Masterplan identifies a possibility of approximately 118 independent living units (ILUs) together with ancillary facilities ((including administration, communal facilities and staff housing) to complement and support the existing aged care facility. The existing aged care facility is not subject to the PP and no external works are proposed to the existing Residential Aged Care Facility (RACF) in the south east of the site as part of this PP.

The site is affected by designated Bushfire Prone Land buffer from a narrow remnant Category 2 Bushfire Prone Land to the north east of the site and the buffer from Category 1 Bushfire Prone Land to the south of the site. The PP has been designed to meet the bushfire requirements within the *Environmental Planning and Assessment Act, 1979* (EPA Act), specifically Direction under section 9.1 of the EPA Act, and Direction 4.3 *Planning for Bush Fire Protection* which applies to PPs that affect, or are in close proximity to, land mapped as BPL.

The project team has engaged directly with the NSW Rural Fire Service (RFS) since May 2024 to establish a shared understanding of bushfire-related issues, clarify technical requirements, and confirm an appropriate risk-based approach to the proposal. This early and ongoing consultation has informed the design development and ensured alignment with current policy settings and bushfire protection objectives.

Bushfire has been a key consideration of the PP. The taller buildings (2 x 6-storey buildings) are located in centre of the site where impacts can be managed and screened by buildings on the periphery of the site and large significant Fig trees which we have specifically 'designed around' to allow their retention. The identified envelopes for these two taller buildings are located some 55m – 60m away from the nearest house on Gaza Avenue and 88m away from the nearest house on Barons Crescent. Site Masterplanning shows that Building B, which is affected by the Category 2 Brushfire Prone Land to the North East of the site has been reconfigured from independent living units to mix of ancillary uses, including administration, communal facilities and staff housing, to meet the APZ setback requirements of the Planning for Bushfire Protection 2019 (PBP).

Basement parking provides a secure and shielded environment for vehicles, ensuring that all parking is contained within the site rather than occupying surrounding streets. This design approach not only alleviates street congestion but also significantly reduces the exposure of parked vehicles to direct flame contact, radiant heat, and ember attack during a bushfire event.

Being located below ground level, the large basement car park benefits from natural shielding by the surrounding earth and concrete, which acts as an effective thermal barrier against extreme heat. Additionally, the basement carpark will be constructed from non-combustible materials such as concrete, further enhancing resistance to fire spread and providing separation from any above ground fire source features. The enclosed nature of the basement car park will improve evacuation safety by providing a protected space for occupants during an emergency, reducing the risk of exposure to heat, smoke, and embers.

The PP has been prepared by Lew Short who is a BPAD Level 3 Certified Practitioner (BPAD 16373). Numerous site inspections have been completed in 2024 and 2025. Lew Shorts credentials are at

Attachment 2. This report demonstrates compliance with the NSW Rural Fire Service (RFS) document *Planning for Bushfire Protection 2019* (PBP). Numerous site inspections have been completed in 2024 and 2025.



Figure 1 Site Location

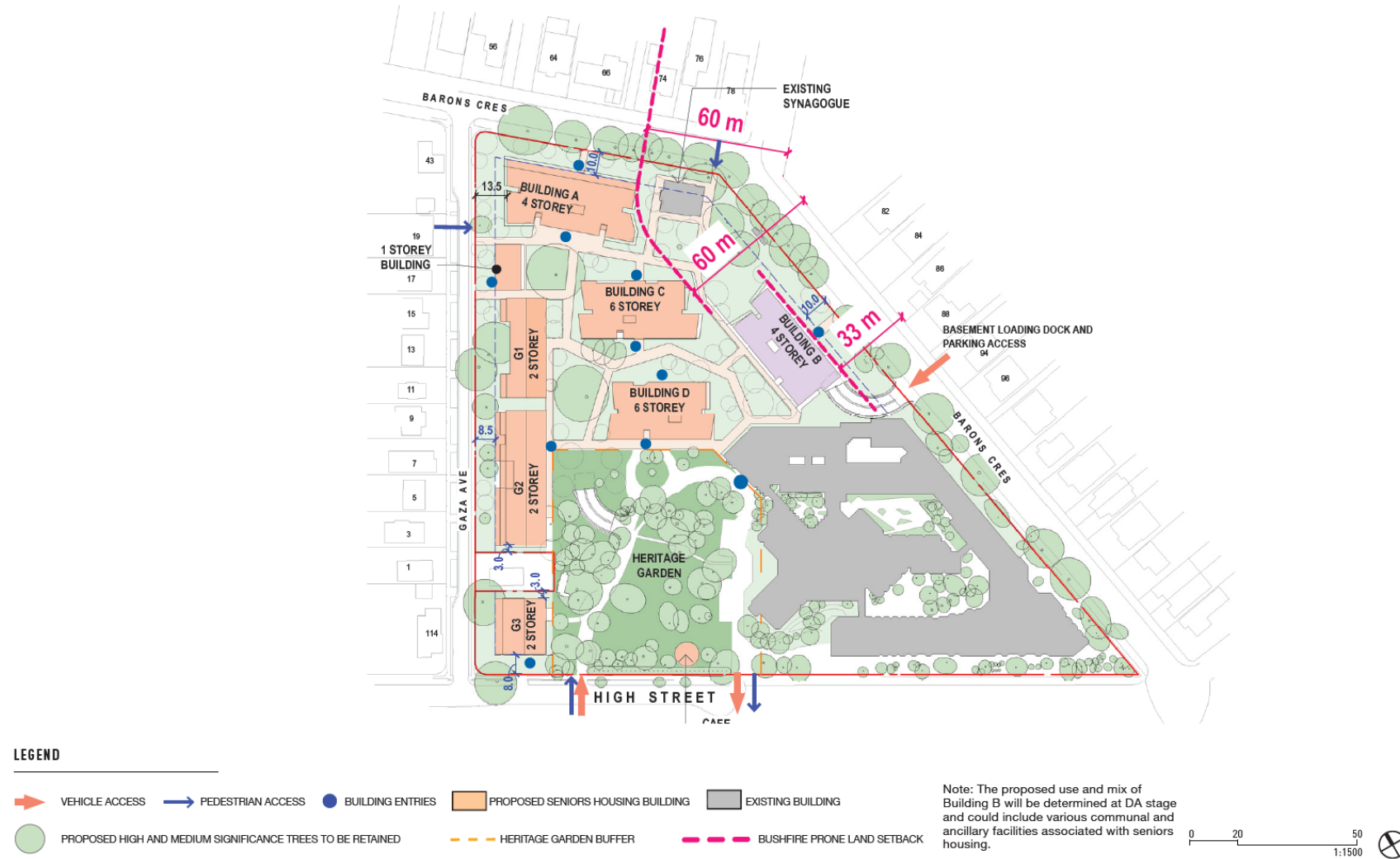


Figure 2 Site Layout Plan including bushfire setbacks

4. Project Description

The intended outcomes of the Planning Proposal are to:

- Amend the LEP to include a SP2 Infrastructure zone across the zone to reflect the historic, current and future intended use of the site.
- Amend the relevant development standard maps, for height of buildings and floor space ratio.

The existing facility has undergone significant upgrading and refurbishment over the years, however, approximately half of the existing residential aged care accommodation is no longer fit-for-purpose and does not meet all the necessary current design standards or expectations of prospective residents.

The intended outcome of the PP is to facilitate the redevelopment of the site to accommodate seniors housing uses which leverages off the current residential aged care facility on the site and its associated services and staff, and that will aid in meeting housing demand and ageing population whilst also contributing to housing diversity within the locality.

The redevelopment presents a significant opportunity for long term future housing growth and the delivery of high-quality retirement living and aged care, including affordable options. This intended outcome is supported by Montefiore.

An Urban Design Report, incorporating an indicative Masterplan (Figure 2) has been prepared by Jackson Teece, to support the PP, in accordance with the requirements set out in the Local Environmental Plan Making Guidelines, for urban renewal sites.

The indicative Masterplan demonstrates how the site could be redeveloped in alignment with the proposed numerical controls, including floor space ratio, building height, height in storeys, and setbacks.

The Masterplan is an indicative concept scheme only and refinements to setbacks, car parking and the internal design, will be subject to detailed design testing and further engagement with Council at the relevant DA stage. A site specific DCP also supports the Masterplan.

Although the exact type and mix of future seniors housing is yet to be determined for the site (including the number of aged care beds), the Masterplan identifies a possibility of approximately 118 independent living units (ILUs) together with ancillary facilities (including administration, communal facilities, and conventional residential housing for Montefiore staff) to complement and support the existing aged care facility, along with basement parking.

A lower domestic scale is provided along Gaza Avenue given the existing scale and narrower road carriageway. A 3-storey street frontage height is provided within Buildings A and B fronting Barons Crescent, stepping up to a 4th level-setback further from the street frontage. This additional height 'can be handled' within this particular context given the wider road carriageway and scale of street-front and site landscaping that will be retained as part of the Planning Proposal.

The draft Masterplan locates increased building heights (see Appendix 7) within the centre of the site (to a total of 24m-being 6 storeys). It provides a significant separating distance of these taller buildings from surrounding dwellings and the ability for buildings around the site's edge as well as the significant (retained) figs and other landscaping within the site to screen and soften these buildings. These measures, together with requirements within the draft DCP to articulate the building facade, all combine to ensure the proposal retains and reinforces the local character of the area, as well as provide much needed seniors housing on an identified strategic site.

The proposal will provide two vehicle access points to the site, one of which is the existing vehicle access point on High Street and the other is from a new (relocated) access point on Barons Crescent. Trips generated to/from the site will also be distributed evenly between the two entry points to the site based on the location of the car parking spaces relative to the location of elevators in the basement.

The Masterplan seeks to protect and enhance the Montefiore Heritage Garden and position the new buildings to address the garden as a focal point of the site. The Masterplan identifies an opportunity to complement existing dense mature trees along the perimeter of the site with additional landscaping within generous setbacks to soften views of the proposed buildings.

A key aim of the Masterplan is to reduce on grade parking and vehicle circulation within the site by locating parking in the basement and minimise parking congestion on surrounding streets.

5. Site Context

The subject site, located at 116-120 High Street, 2-20 Gaza Avenue, and 45-47 Barons Crescent, Hunters Hill, is approximately 4 hectares in size and consists of 18 lots. The site is positioned within a residential area, bounded by High Street to the north, Gaza Avenue to the west, and Barons Crescent to the south.

On the northern boundary of the site, there is a two-storey development comprising of the Montefiore Hostels as well as a Synagogue located in the north-eastern corner of the site. The eastern part of the site is currently occupied by a multi-storey aged care facility including 334 en-suite rooms, common areas, dining rooms, recreation rooms, and a library. The Montefiore Heritage listed Garden is located in the south-western quadrant of the site. The western part of the site is comprised of multiple one - two storey residential buildings owned by Montefiore which are predominantly leased to Montefiore staff. These buildings front Gaza Avenue and are not of heritage significance.

Low density residential housing is located to the north, east and west of the site on Barons Crescent and Gaza Avenue. Higher density five storey residential flat buildings are located to the east of the site in nearby Meyers Avenue, Hunters Hill. The Lane Cove River is located further to the east of the site.

While the site is on a ridgeline, it has existing residential houses to the north along Barons Crescent. The houses on Barons Crescent are on battle axe blocks with two to three houses separating a narrow band of Category 2 Vegetation along the Lane Cove River. Barons Crescent continues around the site to the east with residential houses in both Barons Crescent and Myers Ave. Barons Crescent is used by the 538 bus servicing the local area. A large turning circle for buses is at the southern end of Barons Crescent for the buses which accommodates a bus turning bay or bus turnaround where a bus can turn around in a single movement. Myers Avenue extends parallel to Barons Crescent which provides access for exiting residential buildings including a large mid story apartment block at 1 Myers Ave.

A narrow band of Category 2 vegetation is within land under the care, control and management of Sydney Water at 80 Barons Crescent Hunters Hill which is legally known as Lot 1 DP1037118. As part of preparing this SBS, Montefiore has been in ongoing discussions with Sydney Water regarding the potential for weed management on the edge of this lot to reduce fuel load together with the possibility of providing ongoing management of a narrow 30m asset protection zone within the site. Although weed management will be undertaken on this land in the short term, formalisation of an APZ has not been progressed or agreed. As a result, the site master-planning has now identified Building B (nearest to the fire source) as being used for ancillary uses including administration communal facilities, and conventional residential housing for Montefiore staff allowing compliance of this building with the modelled APZ.

The main access to the site is via High Street on the southern side of the site. High Street does not provide a connection point to Barons Crescent, although a walking path and cleared area extends between the eastern end of High Street and Barons Crescent. High Street is adjacent to Boronia Park Reserve which is approximately 24 hectares, Boronia Park and is the largest area of open space in Hunters Hill. This park offers a wide range of leisure and recreational activities, as well as sports fields and grandstands¹. Land adjacent to High Street is open space that meets the definition of managed land in PBP. The access along High Street is not constrained and does not present pinch points from the High Street access point to the site.

High Street and Barons Crescent blend into existing urban streets that have major arterial road connections at Ryde Road in the south and Pittwater Road in the west. The surrounding residential and developed areas provide managed land that eliminates fire hazard and can serve as a refuge in the event of a fire in the surrounding area.

The proposed development site is bordered to the north and east by a narrow band of Category 2 vegetation, which is bound by the Lane Cove River. Given this vegetation's limited width and fragmented nature, any bushfire ignited within or spreading into this area is unlikely to reach full development before encountering natural suppression factors, including reduced fuel continuity and moisture influences from the adjacent river.

In the event of a bushfire to the north or east of the site, prevailing westerly or northwesterly winds - typical during peak fire season in this region would drive the fire front away from the site, pushing flames, embers, and radiant heat toward the river and reducing direct exposure to the development. The narrow nature of the vegetated corridor means that any fire within it would likely be of lower intensity, with limited capacity to sustain itself due to the proximity of the waterway and the discontinuity of fuels.

The site is located adjacent to a large area of remnant Category 1 vegetation to the south, presenting a more significant bushfire hazard due to the extent and continuity of fuels. Given the size of this vegetation block, a fire igniting within this area could develop into a fully sustained bushfire, with greater flame intensity and potential for ember generation. During peak bushfire conditions, prevailing westerly or north westerly winds would likely drive the fire eastward or southeastward, away from the site.

¹ <https://www.huntershill.nsw.gov.au/Recreation/Parks-and-Reserves/Boronia-Park>

However, under less common but high-risk weather conditions, such as a southerly change, the site could be exposed to a fast-moving fire front, ember attack, and radiant heat.

The proposed PP meets the requirements of PBP and the Ministerial Direction. The Bushfire Protection Measures (BPM) within PBP are able to be met for the PP. The existing aged care building is exposed to a higher bushfire risk and Montefiore continues to meet its obligations to mitigate risk on its land. Fire and Rescue NSW have advised that a hazard reduction burn is proposed adjacent to the site within Boronia Park that will complement existing works by Council to reduce the bushfire risk to the existing asset.

Montefiore will continue to work collaboratively with Council to further reduce this risk. The Hunters Hill Lane Cove Parramatta Ryde Bushfire Risk Management Committee *Bushfire Risk Management Plan 2019 – 2024* designated an asset protection zone along the southern interface of the site which at the time of inspection was well maintained.

6. Gateway Determination

Gateway Determination was issued by the Department of Planning, Housing and Infrastructure for Planning proposal (Department Ref: PP-2023-1109) on 23 April 2024 (see Appendix 4) with conditions including:

1. *Prior to exhibition, the planning proposal is to be updated to:*

(a). Carry out consultation with the NSW Rural fire Service (RFS) to inform the planning proposal so that it addresses the potential overall increase in occupancy numbers on the site and can demonstrate the ability to achieve compliance with the relevant performance criteria in Section 6.4 in 'Planning for Bushfire Protection 2019'.

(b) The planning proposal is to be updated to address the consistency with Section 9.1 Direction 4.3 Planning for Bushfire Protection and demonstrate justification for the planning proposal.

5. Consultation

Consultation is required with the following public authorities and government agencies under section 3.34(2)(d) of the Act and/or to comply with the requirements of applicable directions of the Minister under section 9 of the Act.

Consultation is required with the relevant public authorities and government agencies under section 3.34(2)(d) of the Environmental Planning and Assessment Act 1979 and/or to satisfy the applicable Ministerial directions issued under section 9 of the Act. In this regard, the project team has engaged directly with the NSW Rural Fire Service (RFS) since May 2024 to establish a shared understanding of bushfire-related issues, clarify technical requirements, and confirm an appropriate risk-based approach to the proposal. This early and ongoing consultation has informed the design development and ensured alignment with current policy settings and bushfire protection objectives.

Most recently, the RFS have undertaken and provided radiant heat modelling to Blackash which is included at Appendix 5 to provide a benchmark for setbacks from unmanaged vegetation to the east. The Site Masterplanning has responded to provide indicative building footprints for the ILUs to 60m (see Figure 2).

7. Approach to the Bushfire Strategic Study

The Planning Proposal and indicative design of the site meets the requirements of PBP and the Ministerial Direction.

The strategic planning process provides the opportunity to determine if the site complies with the legislative requirements pertaining to safety and potential risk to life and the capability of the site to comply with various bushfire objectives. This report uses a conservative approach that demonstrates the proposal can meet the legislative and planning requirements. The fundamental issue being tested in this PP application, is the determination of the suitability of amending the relevant LEP to enable greater height and FSR on certain parts of the site, considering bushfire safety and for the ability of future development to comply with PBP.

Where possible, the acceptable solutions outlined in relevant bushfire planning and design guidelines have been adopted in the reporting process and used to inform the development of the PP. These solutions ensure compliance with established best practices and regulatory requirements, providing a structured approach to bushfire risk mitigation.

In addition to the application of acceptable solutions, indicative modelling of radiant heat exposure has been undertaken to assess potential bushfire impact on the proposed development. This preliminary analysis provides an initial understanding of bushfire risk and informs the strategic planning process. However, it is acknowledged that further refinement of the bushfire risk assessment is required to support the next stage of the development process.

As the project progresses, and if required a more detailed assessment will be undertaken through the development of a Bushfire Design Brief. This document will outline the key bushfire risk factors, mitigation strategies, and design considerations specific to the proposal. The Bushfire Design Brief will be prepared in consultation with the RFS to ensure alignment with regulatory expectations and to incorporate any necessary refinements based on agency feedback. This iterative approach will help ensure that the final design appropriately responds to site-specific bushfire risks while maintaining compliance with relevant legislation and guidelines.

Pending the proposed LEP amendment, detailed information building on this PP will be provided in subsequent development applications. This PP provides opportunity for the plan-making authority and referral agencies to flag areas of concern and to determine the suitability of the proposed LEP amendment.

In a bushfire context, strategic land use planning must ensure that future land uses are in appropriate locations to minimise the risk to life and property from bushfire attack. The broad principles which apply to the analysis, and which are demonstrated in this report are²:

- ensuring land is suitable for development in the context of bushfire risk and broader environmental impacts
- ensuring new development on BPL will comply with the minimum requirements of PBP
- minimising reliance on performance-based solutions
- providing adequate infrastructure associated with emergency evacuation and firefighting operations
- facilitating appropriate ongoing land management practices.

In considering to and responding to the bushfire requirements, the following design principles have been incorporated into and are reflected in the proposed uses within the site:

- The PP will comply with the meet the Ministerial Direction and PBP Chapter 4 requirements for a Strategic Planning;
- The PP will comply with the aim and objectives of PBP 2019 and the BPMs within PBP;
- The PP will comply with the aim and objectives of PBP 2019;
- APZ are maximised wherever possible consistent with PBP 2019;
- A defensible space is provided around all buildings;
- The Design Fire (for all Radiant Heat Modelling) is based on the methodology and assumptions in PBP 2019 and site-specific inputs (which will ultimately be agreed with the NSW RFS);
- Buildings are designed and constructed to prevent fire spread during bushfires and structure fire as required by the Building Code of Australia (BCA). Design detail will provided at subsequent development application stage;
- The design provides a layered, cascading approach;
- Any increases in density will be addressed on a bushfire risk basis, consistent with PBP 2019;
- Design is responsive to the vulnerability of the occupants;
- A suitable strategy and design is provided to allow emergency fire brigade intervention to assist evacuation during a bushfire event;

² Planning for Bushfire Protection 2019 p. 34

- Horizontal type exiting through the basement carpark will be available so that occupants can move safely to more protected areas during bushfires;
- Multiple evacuation options are provided from the site;
- A Bushfire Protection, Operations and Maintenance Plan is developed which will include an Emergency Management and Evacuation Plan and ongoing maintenance and certification of essential bushfire protection measures; and
- Emergency management and evacuation planning is developed and implemented through a holistic system to minimise exposure of occupants to potential high-risk bushfire events. This is based on fire weather predictions, actual fire weather conditions and bush fire activity.

8. Strategic Planning for Bushfires

Land use planning is widely recognised as an important measure for limiting future vulnerabilities and losses in areas of new development and a critical element for building disaster resilient communities.

The physical design and layout of communities and settlements are central to the many functions that sustain the social, economic and environmental support systems for the community. Land use planning provides the opportunity to manage new growth and residual risk resulting from new development by complying with legislation and standards, limiting or modifying the location of new development and influencing its layout. This can limit both the impacts of new development on natural systems, ecosystem services and hazards and the flow on impacts on the existing community, as well as limiting the impacts that natural hazards can have on new development and its users.

The strategic planning system is particularly important in contributing to the creation of resilient, safe and sustainable communities that are in keeping with the policy and intent of government.

Comprehensive consideration of bushfires and risks in the NSW planning system needs sound understanding of the landscape context and risks, as well as clarity on risk management principles and on the approach to strategic planning and development controls that will adequately mitigate identified risks. Where there are competing policy objectives, such as biodiversity conservation and fuel reduction, an agreed methodology or guidance is critical. As such, planning decisions must be based on the best available evidence and rigorous merits-based assessment to ensure that new development - people, homes and businesses are not exposed to unacceptable risk from bushfire. The framework provided within PBP provides the minimum requirements for new development within bushfire prone areas.

The importance of sound land use planning has been recognised in most significant bushfire inquiries, including Natural Disasters in Australia which noted that land use planning that considers natural hazard risks is the single most important mitigation measure in preventing future disaster losses in areas of new development, and that planning, and development controls must be effective, to ensure that inappropriate developments do not occur³. The application of legislation, policy, and guidelines provides one of the most effective means of bushfire planning to ensure future developments are

³ Ellis, S et al (2004) National Inquiry on Bushfire Mitigation and Management (p.92)

resilient and capable of protecting life. The benchmark for Planning Proposals is the Ministerial Direction and detail within PBP.

This report focuses on disaster resilience which means planners, hazard leaders, emergency managers and other built environment professionals can contribute to:

- understanding and anticipating bushfire risks before they happen and developing more resilient land use and built form tailored to address bushfire risks.
- minimising the increase in risks to people and disruptions to social and economic functions when a disaster strikes by ensuring compliance with state requirements for new development in Bushfire Prone Areas.

This report uses the balanced approach provided within NSW for new development in Bushfire Prone Areas (BPA) that recognises the need to protect human life and provide safe operating environments for fire and emergency services, while having due regard to the environmental impacts, development potential of land and the need to cater for growing populations.

9. Legislative Framework

The landuse planning framework as it relates to landuse planning and bushfire in NSW is embedded in the EPA Act, the *Rural Fires Act 1997* (RF Act), *Rural Fires Regulation 2013* (RF Reg) which is articulated through PBP.

The ***Environmental Planning and Assessment Amendment Bill 2025*** was released by the NSW Government on 16th September 2025.

The Bill revises section 1.3 (Objects of the EPA Act) to realign the EP&A Act with contemporary priorities. Under the proposed amendments, the objects include (among others):

- promoting land uses that enhance social and economic welfare;
- advancing the supply, delivery and maintenance of housing (including affordable housing);
- fostering productivity through optimal use of state resources; protecting threatened species, ecological communities and their habitats;
- increasing resilience to climate change and natural disasters via adaptation, mitigation, preparedness and prevention; and
- promoting a proportionate and risk-based approach to planning and assessment.

Complementing these revised objects, the Bill introduces reforms to streamline decision-making, cut red tape, and strengthen the role of the Housing Delivery Authority and a new Development Coordination Authority—measures intended to improve efficiency and certainty in the approval of housing and other development.

While not in force, the Bill provides clarity from the NSW Government about the intent and actions required from government agencies. A key object of the *Environmental Planning and Assessment Amendment Bill 2025* is to promote a proportionate and risk-based approach to planning and assessment. In the bushfire context, this objective requires the RFS to move beyond prescriptive, one-size-fits-all controls and ensure that development assessment and advice are matched to the actual level of bushfire risk presented by a site and its proposed land use. A proportionate approach avoids imposing excessive or unnecessary mitigation measures where the bushfire hazard is low or can be effectively managed through other design responses. It also recognises that resources and compliance costs should be directed to where they deliver the greatest improvement in life safety, property protection and community resilience. Applying this principle supports good planning outcomes, enabling well-located and appropriately designed development while maintaining robust protection standards where risk is higher. For the RFS, this means applying the technical framework in PBP with

flexibility and professional judgment, ensuring advice is evidence-driven and tailored to the specific hazard, rather than defaulting to the most restrictive controls regardless of site conditions.

The project team have work to provide a risk based approach to the PP while also meeting the requirements of PBP.

The site is affected by the buffer of designated Bushfire Prone land (Figure 3). Bushfire prone land maps provide a trigger for the development assessment provisions and consideration of sites that are bushfire prone. Bushfire prone land (BFPL) is land that has been identified by council, which can support a bushfire or is subject to bushfire attack. Bushfire prone land maps are prepared by local council and certified by the Commissioner of the RFS.

Figure 3 shows that the site has a narrow band of Category 2 Bush Fire Prone Vegetation to the north east of the site with a minor intrusion of the 30m buffer into the site. The RFS Bushfire Prone Land Mapping Guidelines 2015 (Mapping Guidelines) states (p. 11) that:

Vegetation Category 2

Vegetation Category 2 is considered to be a lower bush fire risk than Category 1 and Category 3 but higher than the excluded areas. It is represented as light orange on a bush fire prone land map and will be given a 30 metre buffer. This vegetation category has lower combustibility and/or limited potential fire size due to the vegetation area shape and size, land geography and management practices. Vegetation Category 2 consists of:

- › Rainforests.
- › Lower risk vegetation parcels. These vegetation parcels represent a lower bush fire risk to surrounding development and consist of:
 - › Remnant vegetation;
 - › Land with ongoing land management practices that actively reduces bush fire risk. These areas must be subject to a plan of management or similar that demonstrates that the risk of bush fire is offset by strategies that reduce bush fire risk; AND include:
 - › Discrete urban reserve/s;
 - › Parcels that are isolated from larger uninterrupted tracts of vegetation and known fire paths;

- › Shapes and topographies which do not permit significant upslope fire runs towards development;
- › Suitable access and adequate infrastructure to support suppression by firefighters;
- › Vegetation that represents a lower likelihood of ignitions because the vegetation is surrounded by development in such a way that an ignition in any part of the vegetation has a higher likelihood of detection.

Figure 3 shows that the site has Category 1 Bush Fire Prone Vegetation to the south of the site with the 100m buffer extending into the site. The RFS Bushfire Prone Land Mapping Guidelines 2015 (Mapping Guidelines) states (p. 11) that:

Vegetation Category 1

Vegetation Category 1 is considered to be the highest risk for bush fire. It is represented as red on the bush fire prone land map and will be given a 100m buffer. This vegetation category has the highest combustibility and likelihood of forming fully developed fires including heavy ember production. Vegetation Category 1 consists of:

- › Areas of forest, woodlands, heaths (tall and short), forested wetlands and timber plantations.

The designation of the site as being affected by a small area of the 30m buffer and 100m buffer does not preclude development, it merely starts the process to consider bushfire in the design of any new development.

Figure 4 provides a broad-area view of the Study Area Bushfire Prone Land (BPL) map, illustrating the spatial relationship between the subject site and surrounding bushfire-prone areas. The mapping confirms that the site is largely isolated from extensive or contiguous areas of classified bushfire-prone land, as it is situated within a highly modified urban environment. The predominant form of vegetation in the immediate vicinity consists of landscaped gardens, street trees, and fragmented patches of vegetation within the built-up setting, which do not present a significant bushfire hazard.

The primary area of retained bushfire-prone vegetation is located along the Lane Cove River corridor, where riparian vegetation forms a natural landscape feature. This corridor, while classified as bushfire-prone land, is separated from the site by established urban development, including road networks and built structures that provide a level of buffering and mitigation. The presence of these existing urban features reduces the likelihood of direct bushfire impact on the site and limits potential for high intensity fire at the site.

The proposed development outlined within the PP does not fall under the scope of **Specification 43** of the Building Code of Australia (BCA). As such, there are no specific compliance requirements or obligations related to Specification 43 for this project. This means that the relevant provisions and guidelines typically governed by Specification 43, which pertains to particular building aspects (e.g., bushfire protection or other relevant standards), having regard to the occupant type and building classification, do not apply to the proposed development. Therefore, the planning and design of the project must adhere to other applicable regulations and standards set forth in the BCA or other relevant codes, but not those stipulated in Specification 43.

10. Ministerial Direction 4.3 Planning for Bushfire Protection

NSW Ministerial Direction 4.3, titled "Planning for Bushfire Protection," outlines guidelines and requirements for managing bushfire risk in land use planning and development in New South Wales, Australia. It aims to ensure that development decisions consider and mitigate potential bushfire hazards effectively. The direction includes provisions for assessing bushfire risk, establishing appropriate buffer zones around designated bushfire-prone areas, and implementing measures to enhance community safety and resilience against bushfires. The directive emphasizes collaboration between relevant authorities, landowners, and developers to prioritize bushfire protection in urban and rural planning processes. The Ministerial Direction is:

The EPA Act sets out the laws under which planning in NSW takes place. The main parts of the EPA Act that relate to development assessment and approval are Part 3 (Planning Instruments) and Part 4 (Development Assessment).

EPA Act Section 9.1 provides for the Planning Minister to direct councils to apply certain standards (detailed in the Direction) when preparing Planning Proposals for consideration. These Directions cover a range of practice areas and carry legislative weight. Planning Direction 4.3 *Planning for Bush Fire Protection* (Appendix 3) states that:

This direction applies to all local government areas when a relevant planning authority prepares a planning proposal that will affect, or is in proximity to, land mapped as bushfire prone land.

Importantly, a Planning Proposal must:

- (a) have regard to Planning for Bush Fire Protection 2019*
- (b) introduce controls that avoid placing inappropriate developments in hazardous areas, and*
- (c) ensure that bushfire hazard reduction is not prohibited within the APZ.*

The SBS must be considered by the Gateway authority (when triggered), before any Planning Proposal to amend an LEP can be submitted to the Department of Planning and Environment (DPE). The SBS may be considered by DPE as part of the Gateway Determination. This determines whether the Planning Proposal should proceed further, or not, towards becoming an Environmental Planning Instrument (EPI).

EPIs are statutory plans made under Part 3 of the EP&A Act that guide development and land use. These plans include State Environmental Planning Policies (SEPPs) and Local Environmental Plans (LEPs). LEPs zone land and provide controls for a suitable range of permissible uses to be considered in more detail at the development assessment stage.

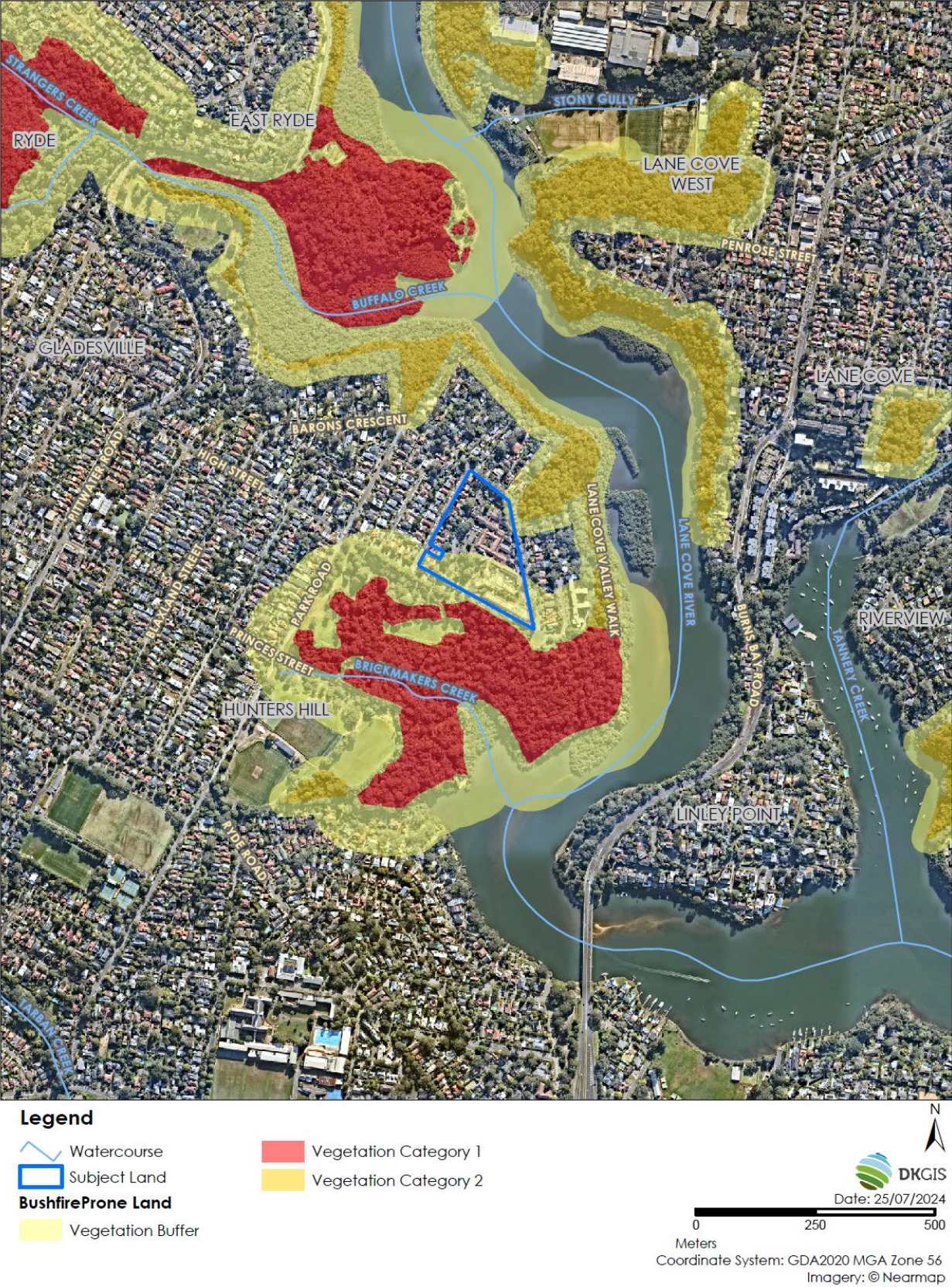


Figure 3 Bushfire Prone Land at the site

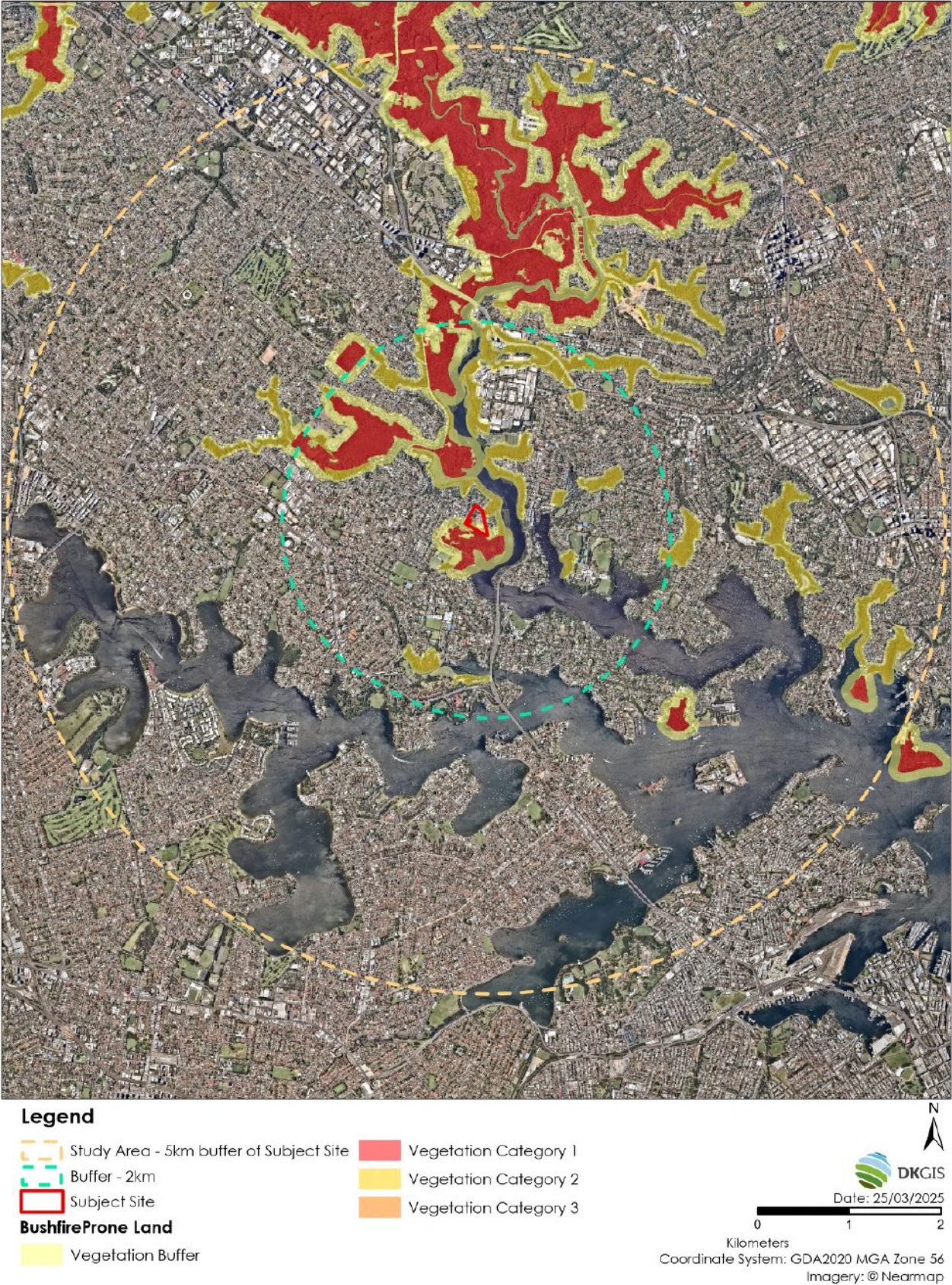


Figure 4 Study Area Bushfire Prone Land

11. Development Assessment

Bushfire Prone Land (BPL) is designated in accordance with s.10.3 of the EP&A Act. BPL is land which can support a bushfire or is subject to bushfire attack, that has been identified and mapped by the local council and certified by the Commissioner of the RFS.

Integrated development, under Division 4.8 of the EP&A Act, is development requiring consent and one or more additional approvals. Section 4.46 of the EP&A Act requires a Bushfire Safety Authority (BSA) from the RFS under Section 100B of the RF Act for residential and rural residential subdivision, or development of land for a Special Fire Protection Purpose (SFPP) on BPL. The PP meets the acceptable solutions within PBP and the subsequent development applications will provide detail on specific subdivision requirements. Future applications will address the extent to which the development complies with PBP.

On designated Bushfire Prone Land, new development needs to justify that the PP results in development that can meet the requirements of PBP.

Future building work on BPL must comply with the requirements of the *National Construction Code* (NCC). Under the Deemed to Satisfy provisions of the NCC, building work on BPL must comply with Australian Standard 3959-2018 *Construction of buildings in bushfire-prone areas* (AS 3959) or the National Association of Steel Framed Housing (2014) *Steel Framed Construction in Bushfire Areas* (NASH Standard).

Future and subsequent Development Applications (DAs) will be prepared and submitted in accordance with the EPA Act, the RF Act and other applicable legislative provisions. Each DA will demonstrate compliance with the bushfire protection measures outlined in PBP, as well as the relevant construction requirements of the National Construction Code (NCC), including AS 3959–2018 or the NASH Standard where applicable. This staged approach ensures that detailed subdivision design, bushfire mitigation measures, and building construction standards are fully addressed at the appropriate approval stage, providing certainty that the development will meet statutory bushfire safety and resilience requirements.

12. General Obligations

All owners and land managers (both public and private) have a duty to prevent the occurrence and spread of bushfires on or from their land. This duty is legislated under Section 63 of the RFA.

Local risk mitigation is coordinated through Bushfire Risk Management Plans (BRMP). These guide programs to implement specific treatments. Treatments may include such things as hazard reduction burning, establishing and maintaining APZ, grazing, preparing pre-incident plans, establishing and maintaining fire trails and community engagement. These may be applied to public and private landowners and as notified steps carry the legislative weight of Section 63.

13. Planning for Bush Fire Protection 2019

The specific objective of this SBS is to assess the proposed development with the strategic assessment considerations in Chapter 4 of PBP. PBP provides the required considerations in addressing Ministerial Direction 4.3.

The PP outcome aligns with the strategic objective to deliver affordable housing supply, while demonstrating compliance with Ministerial Direction 4.3 and the requirements of PBP whilst also balancing other requirements such as access, amenity, ecology, and the like.

The SBS provides the opportunity to assess whether new development is appropriate in the bushfire hazard context at a strategic or landscape scale. It also provides the ability to assess the strategic implications of future development for bushfire mitigation and management. The SBS must first demonstrate the proposal complies with the overall Aim and Objectives of the document.

All new development on bushfire prone land must comply with PBP.

The **aim** of PBP (p. 10) 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** (PBP p. 10) are to:

- *Afford buildings and their occupants protection from exposure to a bushfire*

- Provide for a defensible space to be located around buildings
- Provide appropriate separation between a hazard and buildings which, in combination with other measures, prevent the likely fire spread to buildings
- Ensure that appropriate operational access and egress for emergency service personnel and occupants is available
- Provide for ongoing management and maintenance of Bushfire Protection Measures; and
- Ensure that utility services are adequate to meet the needs of firefighters

Chapter 4 of PBP articulates the regulatory framework for Planning Proposals in NSW, along with a series of assessment considerations that are required before a determination can be made regarding a Planning Proposal.

PBP Section 4.2 (in part, p. 34):

A Strategic Bush Fire Study must include, as a minimum, the components in Table 4.2.1.

Once these strategic issues have been addressed, an assessment of whether the proposal can comply with this document should be carried out. If the strategic issues cannot be resolved, then the proposal cannot comply with PBP and will not be supported by the NSW RFS.

Strategic planning will need to take account of the next level of detail required at Development Application (DA), but without needing to provide complete final project plans, or full assessments for each lot or development proposed. This is designed to provide flexibility for later project stages while progressing the rezoning to permit the new uses.

In terms of development assessment, the risk based and proportionate approach is articulated throughout PBP:

Section 1.4 How to Use This document -

PBP uses a performance based approach, and identifies objectives and detailed performance criteria to satisfy desired outcomes and meet the Aim and Objectives. Ultimately, any performance based approach must demonstrate that bush fire protection is afforded to a proposed development commensurate with the assessed level of bush fire risk and the characteristics of the occupants.

1.4.5 Performance based solutions

Performance based solutions allow flexibility and innovation in responding to site-specific opportunities and constraints while still meeting the identified performance criteria. They also

allow the consideration of a broad range of issues and information, including bush fire risk, community expectations, environmental protection and the application of new science, processes and technologies.

2.3 Strategic planning

The most important objective for strategic planning is to identify whether new development is appropriate subject to the identified bush fire risk on a landscape scale. An assessment of proposed land uses and potential for development to impact on existing infrastructure is also a key element of the strategic planning process in bush fire prone areas. Land use planning policies can be introduced to limit the number of people exposed to unacceptable risk.

See Section 18 Risk Plan Assessment.

14. Development of Existing SFPP Facilities

The PP and subsequent development seek to redevelop the existing site to meet modern building and planning standards while enhancing bushfire resilience. By incorporating contemporary planning and construction materials, improved asset protection zones, and strategic landscaping, the redevelopment will provide for greater bushfire resilience within the site. The design will align with best practices in bushfire mitigation, ensuring safer egress, access for emergency services, and compliance with relevant bushfire planning requirements, including construction in accordance with the Building Code of Australia (BCA). This approach not only improves safety for future occupants but also contributes to a more sustainable and resilient built environment.

Importantly, PBP (p. 52) recognises existing SFPP development:

The intention for any building work occurring within an existing SFPP development is to achieve a better bush fire outcome than if the development did not proceed. Achieving this may require a combination of measures including improved construction standards, APZs and evacuation management. This may result in a level of retrofitting of existing buildings and managing other portions of the site (i.e. APZs) to ensure an improved level of bush fire protection.

Intensification of the use or increase in occupancy must consider the risk to occupants and firefighters. Where practically achievable, full compliance should be provided before variations to the required BPMs are considered.

In accordance with PBP (p. 52), the design team has worked to the following principles:

- *provide an appropriate defensible space; site the building in a location which ensures appropriate separation from the hazard to minimise potential for material ignition;*
- *provide a better bush fire protection outcome for existing buildings;*
- *new buildings should be located as far from the hazard as possible and should not be extended towards or situated closer to the hazard than the existing buildings (unless they can comply with section 6.8);*
- *ensure there is no increase in bush fire management and maintenance responsibility on adjoining land owners without their written confirmation;*
- *ensure building design and construction enhances the chances of occupant and building survival; and provide for safe emergency evacuation procedures including capacity of existing infrastructure (such as roads).*

The above PBP heads of consideration recognises the need to upgrade existing SFPP facilities. The "do nothing" approach is not a viable option because it fails to address existing bushfire risks, outdated infrastructure, and non-compliance with modern building and planning standards. While the bushfire risk to much of the site is low, retaining the current site conditions may leave structures vulnerable to bushfire impacts, posing safety risks to occupants and emergency responders. Additionally, failing to upgrade the site can result in missed opportunities to improve resilience through better building materials, strategic landscaping, and enhanced access for firefighting efforts. The Site Masterplanning supporting the PP does not increase the capacity of the existing RACF.

15. Strategic Planning Compliance

PBP requires that PPs in bushfire prone areas require the preparation of a SBS. For strategic level assessment, this requirement relies on the application demonstrating it is possible to provide complying asset protection zones (APZ) for the proposed development, and that roads and services (water, electricity and gas) will meet PBP.

The SBS is a strategic level assessment, requiring a balance between providing sufficient information to determine the suitability of the site, without overly burdening proponents with detail to be managed / finalised at subsequent DA stage. PBP (p. 19) notes that:

The most important objective for strategic planning is to identify whether new development is appropriate subject to the identified bushfire risk on a landscape scale. An assessment of proposed land uses and potential for development to impact on existing infrastructure is also a key element of the strategic planning process in bushfire prone areas. Land use planning policies can be introduced to limit the number of people exposed to unacceptable risk.

Once development has been assessed as being appropriate in its bush fire prone context, it will need to be capable of complying with PBP. The ability of proposed land uses and associated future developments to comply with PBP will be assessed at the strategic planning stage. The expectation will be that the development will be able to comply with PBP at the DA stage.

The design team has considered and responded to the bushfire requirements within PBP. In a bushfire context, the design team has provided a PP that ensures future development is in appropriate locations to minimise the risk to life and property from bushfire attack. Future development will be able to comply with PBP at the DA stage.

The design team has incorporated the broad principles PBP (p. 34) for strategic planning into the Planning Proposal which apply to the risk assessment of an area which includes:

- *ensuring land is suitable for development in the context of bushfire risk*
- *ensuring new development on BPL will comply with PBP*
- *minimising reliance on performance-based solutions*
- *providing adequate infrastructure associated with emergency evacuation and firefighting operations*
- *facilitating appropriate ongoing land management practices.*

PBP also outlines exclusion of inappropriate development in bushfire prone areas which includes:

- *the development area is exposed to a high bushfire risk and should be avoided*
- *the development is likely to be difficult to evacuate during a bushfire due to its siting in the landscape, access limitations, fire history and/or size and scale*
- *the development will adversely effect other bushfire protection strategies or place existing development at increased risk*
- *the development is within an area of high bushfire risk where density of existing development may cause evacuation issues for both existing and new occupants*
- *the development has environmental constraints to the area which cannot be overcome.*

PBP requires that the SBS must include, as a minimum, the components identified in Table 4.2.1 of PBP – Bushfire Strategic Study (p.35) as shown in Figure 5.

ISSUE	DETAIL	ASSESSMENT CONSIDERATIONS
Bush fire landscape assessment	A bush fire landscape assessment considers the likelihood of a bush fire, its potential severity and intensity and the potential impact on life and property in the context of the broader surrounding landscape.	➤ The bush fire hazard in the surrounding area, including: ➤ Vegetation ➤ Topography ➤ Weather ➤ The potential fire behaviour that might be generated based on the above; ➤ Any history of bush fire in the area; ➤ Potential fire runs into the site and the intensity of such fire runs; and ➤ The difficulty in accessing and suppressing a fire, the continuity of bush fire hazards or the fragmentation of landscape fuels and the complexity of the associated terrain.
Land use assessment	The land use assessment will identify the most appropriate locations within the masterplan area or site layout for the proposed land uses.	➤ The risk profile of different areas of the development layout based on the above landscape study; ➤ The proposed land use zones and permitted uses; ➤ The most appropriate siting of different land uses based on risk profiles within the site (i.e. not locating development on ridge tops, SFPP development to be located in lower risk areas of the site); and ➤ The impact of the siting of these uses on APZ provision.
Access and egress	A study of the existing and proposed road networks both within and external to the masterplan area or site layout.	➤ The capacity for the proposed road network to deal with evacuating residents and responding emergency services, based on the existing and proposed community profile; ➤ The location of key access routes and direction of travel; and ➤ The potential for development to be isolated in the event of a bush fire.
Emergency services	An assessment of the future impact of new development on emergency services.	➤ Consideration of the increase in demand for emergency services responding to a bush fire emergency including the need for new stations/brigades; and ➤ Impact on the ability of emergency services to carry out fire suppression in a bush fire emergency.
Infrastructure	An assessment of the issues associated with infrastructure and utilities.	➤ The ability of the reticulated water system to deal with a major bush fire event in terms of pressures, flows, and spacing of hydrants; and ➤ Life safety issues associated with fire and proximity to high voltage power lines, natural gas supply lines etc.
Adjoining land	The impact of new development on adjoining landowners and their ability to undertake bush fire management.	➤ Consideration of the implications of a change in land use on adjoining land including increased pressure on BPMs through the implementation of Bush Fire Management Plans.

Figure 5: Requirements of a Bush Fire Strategic Study (PBP p. 35)

16. Landscape Assessment – Scale Context

The bushfire landscape assessment considers the likelihood of a bushfire, its potential severity and intensity and the potential impact on life and property in the context of the broader surrounding landscape. This is reflected in the various Study Area maps with the 2km and 5km buffers. The broader landscape and the potential size or scale of a bushfire has been a key design response by the project team throughout the preparation of the Planning Proposal. One of the key balancing approaches has been site utilisation, sensible layout, biodiversity and ecology requirements and bushfire requirements.

The likelihood of a bushfire, its severity and intensity, and the potential impact on life and property varies depending on where a site is located in the landscape. Two types of considerations are relevant in terms of assessing the bushfire hazard including:

- landscape scale hazard – where large expanses of vegetation over tens to hundreds of hectares are located in immediate proximity to, and may traverse, urban periphery suburbs/townships
- localised hazard – which is most commonly presented by fragmented areas of vegetation larger than 1 hectare in size

These two types of hazard present different types of fire behaviour, fire intensity and potential rate of spread characteristics. The site is subject to a range of environmental and historical influences features which provide the current urban form of the area, including bushfire, vegetation corridors, existing land uses, drainage and ecology/biodiversity values.

17. Assessment against adopted Bush Fire Risk Management Plan

The *Hunters Hill Lane Cove Parramatta Ryde Bushfire Risk Management Committee Bushfire Risk Management Plan 2019 – 2024* (Risk Plan) is applicable to the Hunters Hill Local Government Area and the site. The Risk Plan is current, having been approved by the RFS Commissioner on 6 October 2021.

The Bushfire Management Committee (BFMC) that is responsible for the Risk Plan is made up of local representatives of emergency services, land managers and the Council. They are appointed to the BFMC as they are considered the most expert bushfire management practitioners in their agencies in their respective local areas. Their role is to combine both expert knowledge of bushfire and emergency management, and local knowledge to develop plans and priorities for bushfire risk management actions for their respective local areas.

The BFMC is responsible for producing Risk Plan. The Risk Plan is legislatively required under the RF Act and is a strategic document that identifies community assets at risk, rates the relative risks and set out a five-year program of coordinated multi-agency treatments to reduce the risk of bush fire to the assets. Treatments may include such things as mechanical hazard reduction (e.g., slashing, mowing), hazard reduction burning, grazing, community education and fire trail maintenance. The Risk Plan uses a state-wide methodology to risk assess all assets across the state consistently.

18. The Risk Plan Assessment

The Risk Plan notes:

Climate and bush fire season

The typical/ average climate in Hunters Hill Lane Cove Parramatta Ryde BFMC area is for uniform rainfall throughout the year, although higher rainfall can be experience in the months February to March. The bushfire season generally runs from October to March, in which high daytime temperatuies are expected.

Prevailing weather conditions associated with the bushfire season Hunters Hill Lane Cove Parramatta Ryde area are strong north westerly winds, low humidity and high temperatures. These conditions combined with predominantly dry sclerophyll vegetation dramatically influence the behaviour of bushfires in the area. Although fires may occur ay any time of the year, the highest probability of bushfire occurs in December and January.

History of bushfire frequency and ignition cause

The Hunters Hill Lane Cove Parramatta Ryde BFMC area has on average 8 bushfires per year, of which none can be considered a major fire.

Risk Plan references to the Planning Proposal site

The Planning Proposal site and the local area are identified within the *Hunters Hill Lane Cove Parramatta Ryde BFMC* (Figure 6). The site is identified (Figure 6) as having the Lowest Risk.

Throughout the lodgement, consultation, and assessment phases, the applicant has consistently demonstrated through site-specific bushfire assessments, vegetation analysis, and compliance with relevant statutory requirements that the bushfire risk to the site is low which is reflected in RFS assessment of risk (Figure 6). The design and siting of the proposed development, combined with the existing separation from classified vegetation and the absence of significant fire pathways, further confirm (with subsequent RFS policy and guidance documentation) that the likelihood and consequence of bushfire impact are minimal.

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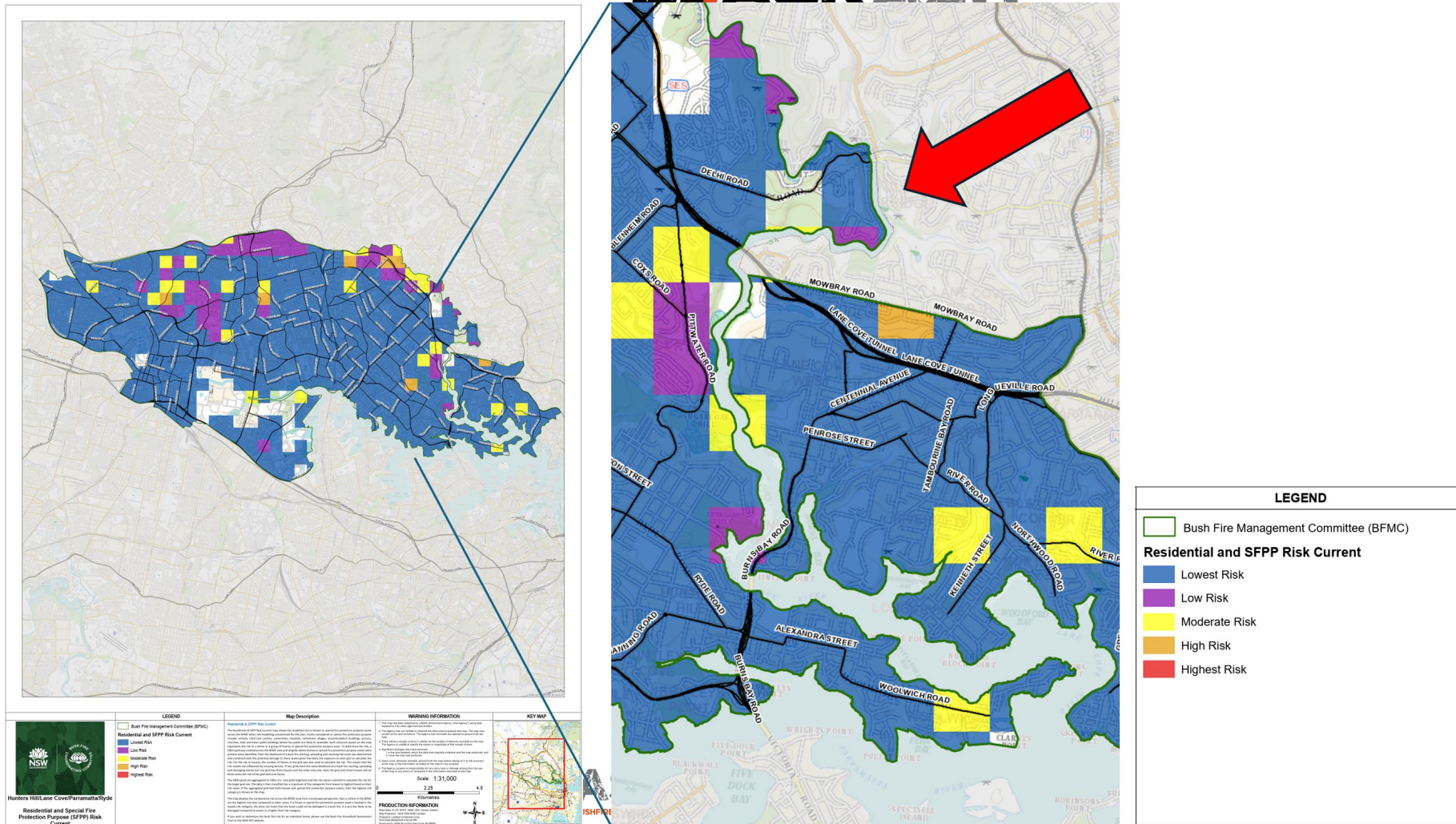


Figure 6: BRMP Risk Profile (source: *The Hunters Hill Lane Cove Parramatta Ryde Bush Fire Risk Management Plan*)

19. Landscape Scale Assessment Tool (LSAT)

The *Victorian Planning Permit Applications Bushfire Management Overlay – Landscape Scale Threat Assessment* has been used as the framework to assess the broader landscape scale potential of bushfire affecting the site. This document is the only Australian contemporary Landscape Scale methodology with legislative weight. Blackash has expanded and modified the criteria to emphasise the priority of life safety, and the criticality of bushfire Emergency Management and Evacuation Planning as part of the risk assessment process.

The Blackash Landscape Scale Assessment Tool (LSAT) combines quantitative and qualitative techniques which are scaffolded by the *Landscape Scale Threat Assessment* and associated documentation. The approach is shown in Table 1 and uses elements of the Bayesian decision making model and Expert Judgment techniques backed by data. Bayesian decision making has been used where there is both objective and subjective data to analyse, and decisions need to be made on the probability of successful outcomes where there are high levels of uncertainty. Expert Judgement has been used in the assessment and determination of the landscape scale risk.

Blackash Expert Judgement is applied consistent with the criteria used in the *National Construction Code (NCC)*⁴ Assessment Methods and NSW Land & Environment Court practice that calls up *Schedule 7 – Expert Witness Code of Conduct* in the *Uniform Civil Procedure Rules 2005*.⁵

The LSAT provides information on the bushfire hazard more than 150 metres away from the site at a landscape scale. The broader landscape and the potential size or scale of a bushfire has been an important design response in the development of the PP. The likelihood of a bushfire, its severity and intensity, and the potential impact on life and property varies depending on where a site is in the broader landscape. Landscape scale fires will place greater pressure on emergency response capability and will have a wider impact on roads and the length of time roads cannot be safely used. This will affect the likelihood of successful evacuations taking place across larger areas and may affect the ability of firefighting resources to be deployed. Multiple factors have been considered for the landscape scale assessment. Key considerations in our assessment have included:

4

https://www.abcb.gov.au/sites/default/files/resources/2021/UTNCC_Using_assessment_methods%20%281%29.pdf

⁵ <https://legislation.nsw.gov.au/view/html/inforce/current/sl-2005-0418#sch.7>

- extent and continuity of vegetation
- topography
- prevailing winds
- the potential fire run and area that is likely to be impacted by the fire
- the impact on evacuation routes to safer places considering road networks, distances, and landscape factors
- the location and exposure of the development to bushfire
- the ability to seek bushfire shelter on site or at alternative locations
- the extent of neighbourhood-scale damage the bushfire may produce.

PBP refers to all metropolitan councils Fire Weather District, and the appropriate maximum Forest Fire Danger Index (FFDI) to be applied in the LGA is FFDI 100.

Landscape scale fires are those that can span many kilometres or tens of kilometres, and that burn for days or weeks at a time. Typically, these fires can be many thousands of hectares in size with fire fronts many kilometres in length. On the east coast of Australia this scale of fire is only possible where there are very large areas of forested vegetation, typically National Parks and State Forests that also adjoin substantial areas of private bushland.

The PP site is within a landscape setting that has a long history of vegetation modification for urban development and housing. The site is affected by designated Bushfire Prone Land buffer from a narrow remnant Category 2 Bushfire Prone Land to the north east of the site and the buffer from Category 1 Bushfire Prone Land to the south of the site.

Low density residential housing is located to the north, east and west of the site on Barons Crescent and Gaza Avenue. Higher density five storey residential flat buildings are located to the east of the site in nearby Meyers Avenue, Hunters Hill. The Lane Cove River is located further to the east of the site.

While the site is on a ridgeline, it has existing residential houses to the north and east along Barons Crescent. The houses on the northern side of Barons Crescent are on battle axe blocks with two to three houses separating a narrow band of Category 2 Vegetation along the Lane Cove River to the north.

The proposed development site is bordered to the north and east by a narrow band of Category 2 vegetation, which is bound by the Lane Cove River. Given this vegetation's limited width and fragmented nature, any bushfire ignited within or spreading into this area is unlikely to reach full development before encountering natural suppression factors, including reduced fuel continuity and moisture influences from the adjacent river.

In the event of a bushfire to the north or east of the site, prevailing westerly or northwesterly winds - typical during peak fire season in this region - would drive the fire front away from the site, pushing flames, embers, and radiant heat toward the river and reducing direct exposure to the development.

The narrow nature of the vegetated corridor means that any fire within it would likely be of lower intensity, with limited capacity to sustain itself due to the proximity of the waterway and the discontinuity of fuels. A narrow band (approximately 30m) adjoins at Barons Crescent) at the junction of Barons Crescent and Thorn Street. This area is highly degraded and presents limited potential for bushfire to impact the site as any fire would have to be driven by a north easterly prevailing wind which tends to be associated with lower temperatures, higher relative humidities and limited winds. While presenting a pinch point, it does not present a challenge for management of people within the site as additional egress routes are available that are not impacted by fire along Gaza Ave, High Street and Barons Crescent.

The site is located adjacent to a larger area of remnant Category 1 vegetation to the south, presenting a more significant bushfire hazard due to the extent and continuity of fuels. Given the size of this vegetation block, a fire igniting within this area could develop into a fully sustained yet short lived bushfire, with greater flame intensity and potential for ember generation. During peak bushfire conditions, prevailing westerly or north westerly winds would likely drive the fire eastward or southeastward, away from the site. However, under less common but high-risk weather conditions, such as a southerly change, the site could be exposed to a fast-moving fire front, ember attack, and radiant heat. The Risk Plan has a designated asset protection zone along the southern boundary of the site where it joins Boronia Park (see Section 13) providing separation from the existing RACF which is not part of the PP.

The potential for local scale bushfire threat at the site are limited. However, the local scale fires may still be significant and can cause local damage, as wherever vegetation is retained there will always be some residual risk to manage, however they most likely not result in widespread property destruction. Local scale fires in such a managed landscape also tend to be noticed quickly by the public and called in to emergency services soon after ignition.

Due to the application of PBP requirements throughout the development process there will be good access for firefighting at the interface, suitable construction standards keeping radiant heat levels at below the required limits within PBP, suitable firefighting water supplies, and management of open space areas for the site. These will be detailed in the subsequent Bushfire Hazard Assessment with the DA.

Overall Landscape Scale Assessment

The LSAT is heavily weighted to life safety and places significant emphasis on the ability for the future community to be able to shelter in place or evacuate safely, whilst emergency services can access the site at the same time. The safest methods of protection are not to be in a bushfire hazard area during a day of bad fire risk; have a clear evacuation to an urban area more than 100m from hazard vegetation;

and to have a shelter in place strategy in a well prepared property with the dwelling built to contemporary standards. A combination of these methods is likely to maximise life safety whilst still allowing for normal life to continue during the bushfire season.

When the individual factors are scored, after consideration of the landscape context, the site design complying with PBP, and the large urban area, the overall Landscape Scale Threat for the site is assessed as **Low Risk**. The summary and weighted scores are presented in Table 1 below.

However, development will be subject to bushfire assessment and specific building standards as required by PBP and AS 3959:2018 (or contemporary documents as time passes) and will therefore offer suitable shelter from bushfire for individual buildings ultimately approved within the PP site up to and including Catastrophic Bushfire Danger Ratings. This shelter in place approach, combined with quick and intuitive self-evacuation away from bushland to within the site and suitable buildings will provide options for immediate life safety for occupants and will reduce the need or desire for evacuations from the site.

The LSAT (Table 1) provides landscape scale expert evaluation of:

- Surrounding Vegetation
- Bushfire Behaviour
- Impact of severe fire behaviour (FFDI 80 or 100 as relevant) coming onto site from wider fire catchment
- Vegetation Corridors Separation.
- Shelter.
- Evacuation Isolation and emergency services
- Firefighting water supplies

Table 1 Blackash Landscape Scale Assessment Tool

Landscape Scale Assessment Tool					
Parameter	Low landscape scale threat	Moderate landscape scale threat	High landscape scale threat	Extreme landscape scale threat	Rating
1. Surrounding Vegetation	Bushfire cannot directly approach the site as it is surrounded by urban development and non-mapped vegetation or managed land.	Bushfire can only approach from one aspect and the site is within a suburban, township or urban area considered managed land. Typically an island of bushfire vegetation within a wider urban development area; site with highly fragmented vegetation nearby; or interface site impacted only by linear vegetation corridors of 100m width or less.	Bushfire can approach from more than one aspect and site is on the bushland-urban interface with the developed area considered as managed land. Typically contiguous bushfire vegetation with a typical fire run in any direction of 0.1-2.0 km distance.	Bushfire can approach from more than one aspect and/or fires have many hours or days to grow and develop before impacting and/or site is surrounded by significant unmanaged vegetation. Typically large areas of contiguous bushland with fire runs of more than 2 km possible.	Moderate
2. Bushfire Behaviour	Extreme bushfire behaviour at the site is not possible given the broader landscape.	Extreme bushfire behaviour at the site is unlikely in this broader landscape due to combination of factors of vegetation type, vegetation fragmentation, aspect and topography.	Extreme bushfire behaviour at the site is likely in this broader landscape due to combination of factors of vegetation type, vegetation fragmentation, aspect and topography.	Extreme bushfire behaviour is very likely in this broader landscape due to combination of factors of vegetation type, vegetation fragmentation, aspect and topography.	Moderate
3. Impact of severe fire behaviour (FFDI 80 or 100 as relevant) coming onto site from wider fire catchment	There is little vegetation beyond 150 metres of the site (except grasslands and low-threat vegetation) and will not result in neighbourhood scale destruction of the site.	The type and extent of vegetation beyond 150m from the site may result in neighbourhood-scale destruction as it interacts with the bushfire hazard on and close to the site.	The type and extent of vegetation beyond 150m is likely to result in neighbourhood-scale destruction as it interacts with the bushfire hazard on and close to the site.	The type and extent of vegetation beyond 150m will result in neighbourhood-scale destruction as it interacts with the bushfire hazard on and close to the site.	Low
4. Vegetation Corridors	Vegetation within the site cannot enable fire to enter and move through the site by a continuous fire path from the primary fire source.	Vegetation within the site is unlikely to enable fire to enter and move through the site by a continuous fire path from the primary fire source.	Vegetation within the site may enable fire to enter and move through the site by a continuous fire path from the primary fire source.	Vegetation corridors on site provide for passage of fire to enter and move through the site from the primary fire source.	Low
5. Separation	Hazard separation between extreme bushfire hazard and buildings of greater than 100m. Extreme bushfire hazard does not include vegetated corridors of less than 100m width or grasslands.	Hazard separation between extreme bushfire hazard and buildings of 50-100m. Extreme bushfire hazard does not include vegetated corridors of less than 100m width or grasslands.	Hazard separation between extreme bushfire hazard and buildings of 20-50m. Extreme bushfire hazard does not include vegetated corridors of less than 100m width or grasslands.	Hazard separation between extreme bushfire hazard and buildings of <20m. Extreme bushfire hazard does not include vegetated corridors of less than 100m width or grasslands.	Moderate
6. Shelter	Immediate access is available to a place that provides shelter from bushfire. This includes existing or proposed buildings on site constructed in accordance with PBP.	Access is readily available to a place that provides shelter from bushfire. This will often be the surrounding developed area.	Access to a place that provides shelter from bushfire is not certain during a wildfire and existing buildings are not built to PBP standards.	Access to a place that provides shelter from bushfire is not possible during a wildfire.	Low
7. Evacuation	Multiple evacuation routes are available and unlikely to be impacted by fire.	Evacuation to alternate location that provides life safety refuge is <1km and can be completed by foot or vehicle.	Evacuation to alternate location that provides life safety refuge is 1km-10km.	Evacuation to alternate location that provides life safety refuge is > 10km.	Low
8. Isolation and emergency services	Seamless integration with existing settlement - no impact on evacuation or access for emergency services.	Short bushland pinch points that may carry fire across roads and restrict access briefly during passage of fire. Unlikely impact on evacuation or access for emergency services.	Short bushland pinch points that are likely to carry fire across roads and restrict access temporarily. Likely impact on evacuation or access for emergency services.	Large areas of bushland or multiple pinch points that are likely to carry fire across roads in forest areas and will block evacuation or emergency service access routes for extended time.	Moderate
9. Firefighting water supplies	Site is within urban area and has access to reticulated water supply OR site has dedicated firefighting water supply in accordance with PBP requirements.	Site is on the periphery of urban area and has access to reticulated water supply that may be more susceptible to interruption.	Site is outside urban area and relies on an on site water supply not in accordance with PBP.	Site is in an isolated area and relies on an on site water supply not in accordance with PBP.	Low
Overall Threat Rating			Low Risk	Total	130

Conclusion regarding compliance with PBP 4.1 Strategic Principles:

Consideration of the strategic bushfire context including an assessment of the local landscape characteristics and likely bushfire behaviour demonstrates the site is suitable for development in accordance with PBP.

Consideration of the location of the site in the wider landscape and the low possibility of the site being impacted by Landscape Scale bushfire threat and Local bushfire threat.

As a new development, the PP can be conditioned to meet the PBP and presents a low risk of high consequence bushfire impacting the site. The PP demonstrates compliance with PBP for the critical assessment areas of separation from hazards, access

As required by PBP (p. 34), this Strategic Bush Fire Study provides the opportunity to assess whether new development is appropriate in the bush fire hazard context. It provides the ability for various stakeholders to assess the strategic implications of future development for bushfire mitigation and management. Chapter 4 of PBP provides high level heads of consideration for new PPs which when considered against the low landscape scale bushfire risk and the local risk identified the Risk Plan, the following conclusions can be drawn:

- the development area is not exposed to a high bush fire risk and as a result is viable to the proposed PP. The bushfire risk is not sufficient that development of the site should be avoided;
- the development is not likely to be difficult to evacuate during a bushfire due to its siting in the landscape. There are no access limitations and underground protected access and egress is provided by the basement carpark. The site has limited fire history and the potential of any fires to fully develop and impact the site is limited;
- the development will not adversely effect other bushfire protection strategies or place existing development at increased risk;
- the development is not within an area of high bush fire risk where density of existing development may cause evacuation issues for both existing and new occupants as multiple egress options are available from the site included protected egress via the below ground basement car park.
- the site has existing development and there are no known environmental constraints to the site which cannot be overcome.

20. Site Specific Bushfire Hazard Assessment

The PP is next assessed against the site specific requirements of PBP and will address in detail below the requirements of Chapter 4 – Strategic Planning and will consider relevant sections within Chapters 5-8 of PBP. The following sections address the requirements of Chapter 4 Strategic Planning Table 4.2.1 of PBP (p. 35) as shown in Figure 5.

PBP 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 potential hazardous landscape that may affect the site and the effective slope within that hazardous vegetation. For new development, APZ requirements are based on providing practical building envelopes on lots that keep radiant heat levels at future buildings below 29kW/m² for residential development and 10kW/m² for the ILUs.

The following assessment is prepared in accordance with Section 100B of the RFA, Section 44 of the *Rural Fires Regulation 2013* (RFR) and PBP. This assessment is based on the following resources:

- Planning for Bush Fire Protection (RFS, 2019);
- The Council Bush Fire Prone Land Maps;
- Aerial mapping;
- Detailed GIS and site analysis, and
- Site inspection.

The methodology used in this assessment is in accordance with PBP (p.80) and is outlined in the following sections.

21. Fire Danger Weather District

PBP requires a credible worst case bushfire weather scenario at a 1:50 year bushfire weather event. PBP refers to The BPMC area includes and includes the Local Government Areas of Wollongong, Shellharbour and Kiama, and the appropriate maximum Forest Fire Danger Index (FFDI) to be applied is FFDI 100.

22. Vegetation Assessment

Vegetation is the fundamental physical component of determining the bushfire behaviour. Vegetation, in broad terms provides the available fuel to be consumed by a bushfire. Fuel load and arrangement represents a considerable component in dictating to a large degree the

behaviour of fire in terms of intensity, rate of spread and flame height, and typically relates to dead plant material less than 6mm thick, and live plant material thinner than 3mm.

Vegetation type, density and arrangement can further influence fire behaviour and intensity. Vertical and horizontal continuity is also a significant element. Thus, vegetation forms a key consideration within this report.

The vegetation assessment has been completed in accordance with PBP. The predominant Vegetation is classified by structure or formation using the system adopted by David Keith (2004) and by the general description using PBP.

Vegetation types give rise to radiant heat and fire behaviour characteristics. The predominant vegetation has been determined for the site over a distance of at least 140 metres in all directions from the proposed site boundary or key assets on the development site. Where a mix of vegetation types exist, the type providing the greater hazard is said to predominate.

The Study Area vegetation formation is shown in Figure 7.

For assessment purposes, the predominant vegetation affecting the Subject Site is forest vegetation. Grey Mangrove-River Mangrove Forest (PCT ID 4091) is along the Lane Cove River frontage which is low threat vegetation as designated in PBP A1.10 Low Threat Vegetation Exclusions (p. 88). Sydney Coastal Sandstone Foreshores Forest (PCT ID 3594) is to the east, north east and south of the site.

The site is currently managed land and the Montefiore Heritage listed Garden is located in the south-western quadrant of the site. This is managed land in accordance with PBP. The remainder of the site is currently managed and will continue to be managed land in accordance with PBP.

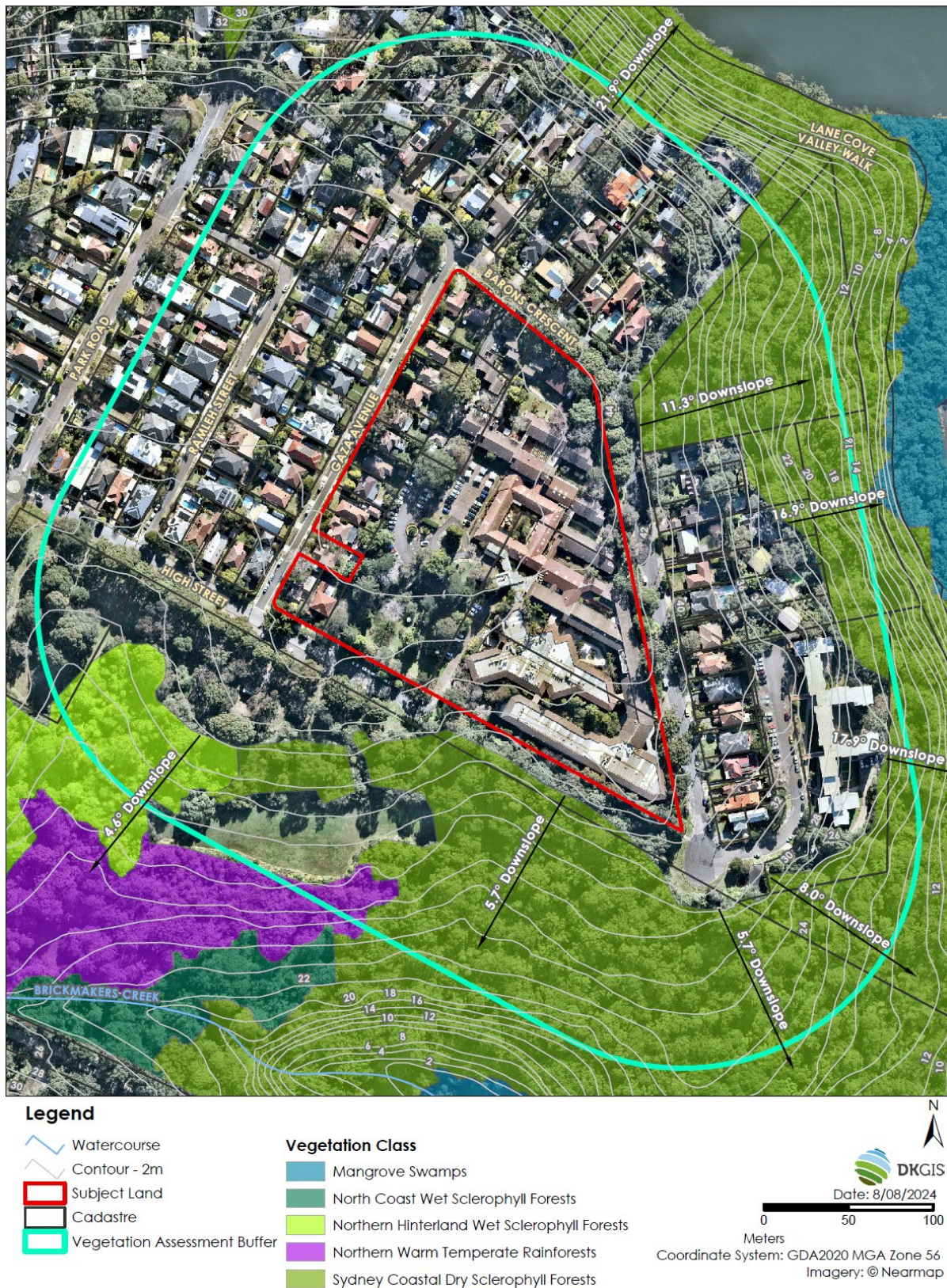


Figure 7 Vegetation Formation and Slope Assessment

23. Slopes Influencing Bushfire Behavior

PBP requires assessment of slope. The slope of the land under the classified vegetation has a direct influence on the rate of fire spread, the intensity of the fire and the ultimate level of radiant heat flux. The effective slope is the slope of the ground under the hazard (vegetation). In identifying the effective slope, it may be found that there are a variety of slopes covering different distances within the vegetation. The effective slope is considered to be the slope under the vegetation which will most significantly influence the bushfire behaviour for each transect. This is usually the steepest slope.

The broader slopes affecting the Subject Site are shown in Figure 7 and Table 2.

Table 2 Vegetation & Slope Assessment

Aspect	Vegetation	Slope
North	Existing residential houses - NA	NA
East	Sydney Coastal Dry Sclerophyll Forests to the north east within 80 Barons Cres. Existing residential houses to the east. Narrow band of Sydney Coastal Dry Sclerophyll Forests then Mangroves along the Lane Cove River.	11.3° downslope 16.9° downslope east of existing residential houses.
South	Sydney Coastal Dry Sclerophyll Forests to south east. Boronia Park to the south of the site and remnant Sydney Coastal Dry Sclerophyll Forests.	5.7° downslope to south and south east 4.6° downslope under vegetation within Boronia Park.
West	Existing residential houses - NA	NA

24. The potential fire behaviour that might be generated based on vegetation and slope

The maximum potential fire behaviour is limited by the location, topography and vegetation surrounding the PP site. The evidence supports the view that the potential of the most severe fire weather is from the west to northwest of the site. Although, fires could impact the site under easterly, southerly or north easterly winds.

25. Any history of bushfire in the area

State-based data provides for the fire history for the Study Area (Figure 8). No recent fire history is in close proximity (within 2km) to the site.

Bushfires can occur at any time of the year. The Australasian Fire and Emergency Services Council (AFAC) Bushfires and Community Safety Position Paper (p. 3) outlines nationally agreed positions for the fire services which states that:

Bushfire loss can be reduced or avoided in some cases but cannot be entirely prevented. A balance needs to be struck between measures taken to reduce or avoid harm and loss due to bushfire, and the protection of other values.

The position paper (p. 3) recognises that

Bushfire is a normal part of Australia's natural environment, particularly in eucalypt forests and grasslands. However, the frequency and intensity of bushfires varies throughout the landscape and the seasons. Bushfires are a common occurrence during the drier periods of the year in most places.

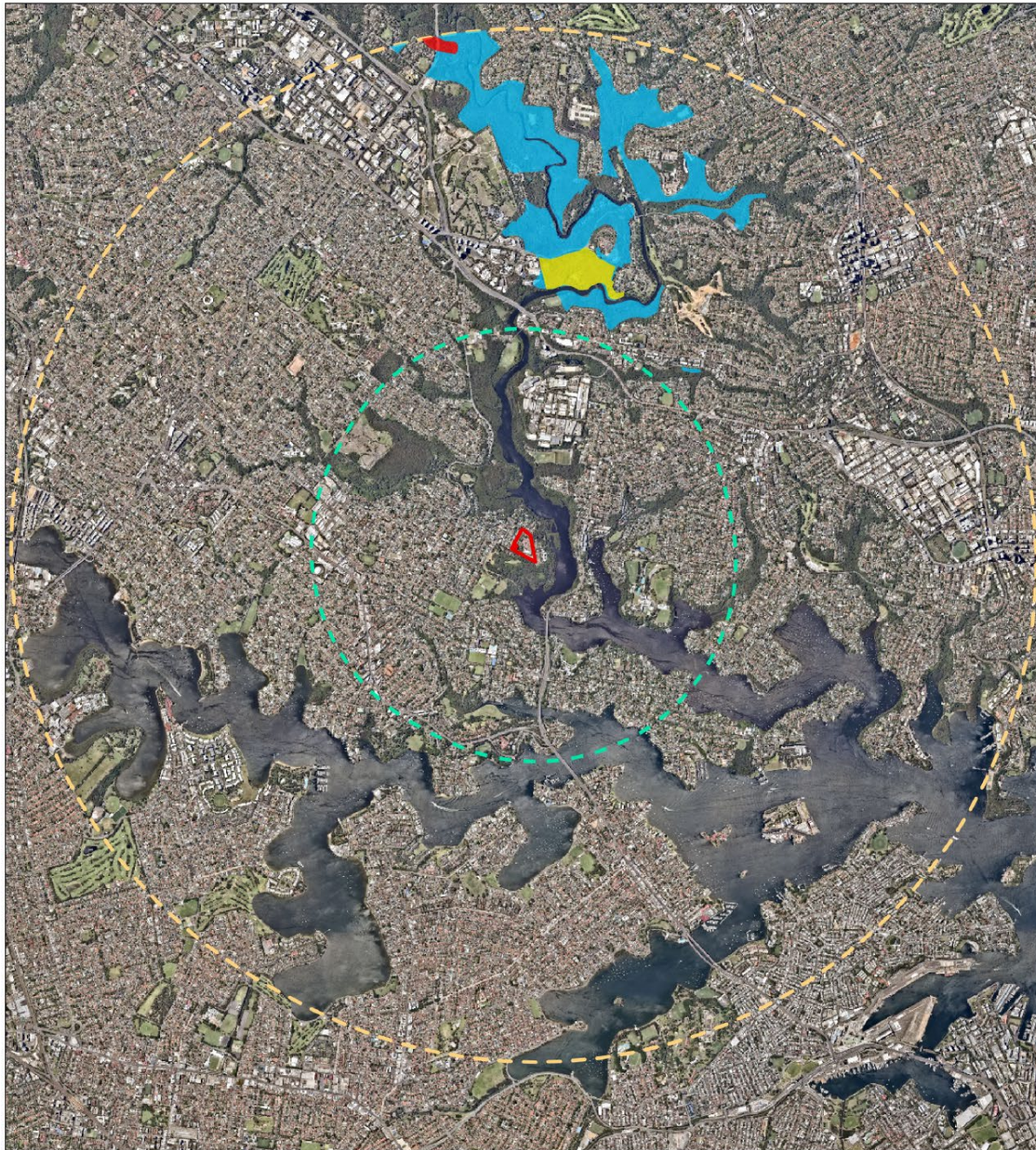
And that

Bushfires of low or moderate intensity often pose little threat to life, property and community assets, but the potential for changes in wind direction can be a significant hazard. However, bushfires that burn in heavy fuels, steep terrain or on hot, dry and windy days often spread rapidly, crown in forests, produce powerful convection columns and create extensive spot fires ahead of the fire front, often making their control impossible until weather conditions moderate.

As the Fire Danger Rating reaches 'Extreme', bushfires are often described as 'firestorms' and become impossible to control. When the Fire Danger Rating approaches 'Catastrophic', the risk of serious injury or death to people in the path of a bushfire increases

significantly, and many properties and other community infrastructure can become difficult or impossible to defend.

The NSW planning framework accepts this fundamental premise and PBP is based on credible worst-case fires (1:50 year event) affecting the new development based on a Fire Danger Rating of Catastrophic. The response to potential fires affecting the site are determined by the Bushfire Protection Measures contained within PBP. PBP does not seek to stop fires, rather, it recognises the fundamental risk of bushfire affecting new development and puts in place minimum requirements to provide a tolerable approach to risk management. The approach within PBP does not consider fire history and assumes a credible worst case fire weather event and maximum vegetation regardless of management intervention. As such, the provision of meeting the acceptable and performance-based criteria within PBP reflects a tolerable level of risk by the State.



Legend

- Study Area - 5km
 - Buffer of Subject Site
 - Buffer - 2km
 - Subject Site
- Fire History (Year)**
- 2017
 - 2012
 - 2011
 - 2000
 - Pre 2000

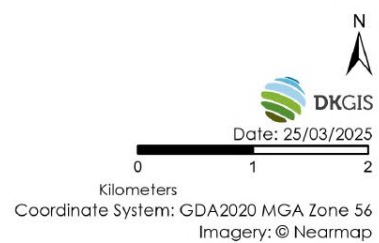


Figure 8 Fire History

26. Potential fire runs into the site and the intensity of such fire runs

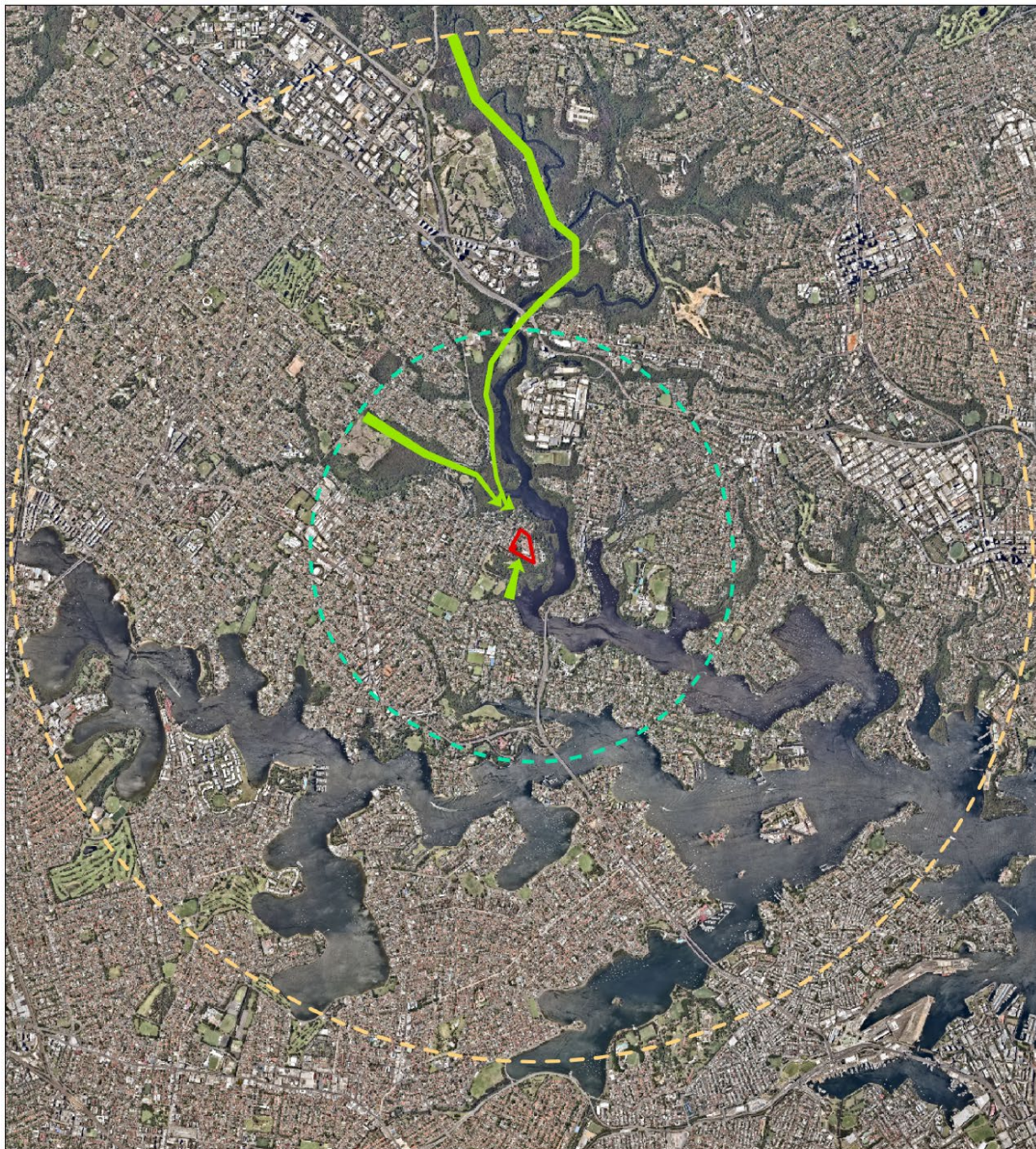
Potential fire runs impacting the site are shown in Figure 9. A limited number of potential fire runs can run into or into the vicinity of the site. The potential fire intensity within these fire runs depends on the prevailing weather conditions. For the purposes of PBP, the worst case design fire has been adopted (FFDI 100) for this assessment which provides acceptable risk up to Catastrophic Fire Danger Ratings.

It is unlikely that a fully developed crowning fire could impact the site. PBP is predicated on a fully developed crowning fire burning under a Forest Fire Danger Index (FFDI) of 100 or at the start of Catastrophic Bushfire Danger Rating conditions. The design fire within PBP is a probable worst case fire and the separation distances and bushfire protection measures within PBP are developed in anticipation of a 1:50 year fire or up to Catastrophic fire conditions.

In the event of a bushfire to the north or east of the site, prevailing westerly or northwesterly winds typical during peak fire season in this region would drive the fire front away from the site, pushing flames, embers, and radiant heat toward the river and reducing direct exposure to the development. The narrow nature of the vegetated corridor means that any fire within it would likely be of lower intensity, with limited capacity to sustain itself due to the proximity of the waterway and the discontinuity of fuels.

A narrow band (approximately 30m) adjoins at Barons Crescent) at the junction of Barons Crescent and Thorn Street. This area is highly degraded and presents limited potential for bushfire to impact the site as any fire would have to be driven by a north easterly prevailing wind which tends to be associated with lower temperatures, higher relative humidities and limited winds. While presenting a pinch point, it does not present a challenge for management of people within the site as additional egress routes are available that are not impacted by fire along Gaza Ave, High Street and Barons Crescent.

The site is located adjacent to a larger area of remnant Category 1 vegetation to the south, presenting a more significant bushfire hazard due to the extent and continuity of fuels. Given the size of this vegetation block, a fire igniting within this area could develop into a fully sustained yet short lived bushfire, with greater flame intensity and potential for ember generation. During peak bushfire conditions, prevailing westerly or north westerly winds would likely drive the fire eastward or southeastward, away from the site. However, under less common but high-risk weather conditions, such as a southerly change, the site could be exposed to a fast-moving fire front, ember attack, and radiant heat. The Risk Plan has a designated asset protection zone along the southern boundary of the site where it joins Boronia Park (see Section 13) providing separation from the existing RACF which is not part of the PP.



Legend

-  Potential Fire Runs
-  Study Area - 5km buffer of Subject Site
-  Buffer - 2km
-  Subject Site

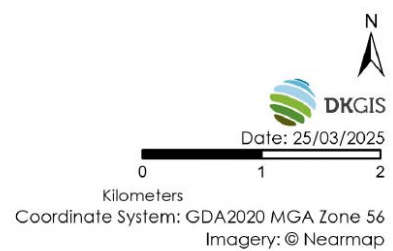


Figure 9 Fire Runs into the Site

27. The difficulty in accessing and suppressing a fire, the continuity of bushfire hazards or the fragmentation of landscape fuels and the complexity of associated terrain

The site is within Fire and Rescue NSW response area. Fire and Rescue NSW Gladesville Fire Station is located at 7A Pittwater Rd, Gladesville which is 2.1km or less than 5 minutes to the site.

The site and surrounding area benefits from unconstrained firefighter access, with established road networks providing direct and efficient entry points for emergency response vehicles. The existing roadways are well-maintained, meet the necessary width and load-bearing requirements, and incorporate turning areas suitable for firefighting appliances. There are no significant barriers, such as locked gates, narrow driveways, or inadequate clearances, that would impede response times or operational effectiveness. Additionally, the site is serviced by an accessible reticulated water supply, further supporting effective fire suppression activities. These conditions ensure that emergency services can respond promptly and safely in the event of a fire.

Access within the site is available to Medium Rigid (MR) fire appliance and is provided in accordance with PBP.

28. The risk profile of different areas of the development layout

The risk profile of the development is within tolerable limits as defined within PBP. The PBP provides a concept which utilises the existing road network and perimeter roads to the north and west of the site. The APZs meet the PBP requirements and construction can be completed in accordance with the *Australian Standard for Construction of Buildings in Bushfire Prone Areas* (AS3959). Subdivision and construction will be addressed in detail with the subsequent DA. Services are able to comply with PBP. Landscaping for the PP has been developed having regard to the APZ requirements and there are no fire source pathways within retained or planted vegetation within the site.

The combination of suitable access, APZ, onsite water supplies and compliance with contemporary building standards will significantly reduce the need for late-stage evacuations. Appropriately designed lots (in accordance with PBP), and buildings constructed (in accordance with AS3959) and prepared properties will offer people options for sheltering during most bushfires (below Catastrophic FDR), reducing the likelihood of bushfire-related injury and death. The nationally agreed position is that the safest option is to leave a bushfire prone area early on days with a Fire Danger Rating of Extreme or higher.

29. Asset Protection Zones

For proposed new development, PBP requires that a minimum separation is provided in the form of APZ. The APZ is a fuel-reduced, physical separation between buildings and bushfire hazards. For residential developments, APZ requirements are based on keeping radiant heat levels at buildings below 29kW/m^2 for residential development and 10kW/m^2 for SFPP development as the maximum exposure on all sides of the building.

As an existing use, the Montefiore site is infill development. The site and uses are specifically identified within the Hunters Hill Local Housing Strategy 2021 (the Strategy) as a 'key strategic site'. This Strategy has been endorsed by both Council and the Department of Planning and Environment (DPE). The Strategy outlines that the site has potential to undergo master planning and redevelopment to meet considerable anticipated demand in the area for retirement living- the Planning Proposal is consistent with this Local Strategy.

PBP (p. 52) recognizes infill development stating that:

Intensification of the use or increase in occupancy must consider the risk to occupants and firefighters. Where practically achievable, full compliance should be provided before variations to the required BPMs are considered.

Chapter 4 of the PBP outlines the key considerations for rezonings, emphasising a risk-based assessment approach to evaluate the bushfire exposure of the PP. This assessment ensures that the proposed development is capable of meeting the bushfire protection measures outlined in PBP, particularly in relation to Asset Protection Zones (APZs) and access requirements for emergency services and evacuating residents.

A fundamental component of this process is determining whether the proposed land use and layout can effectively manage bushfire risk through appropriate separation distances, defensible spaces, and reliable evacuation routes. As demonstrated throughout this report, the bushfire risk associated with the PP aligns with the requirements of PBP, with adequate provisions in place to mitigate potential impacts.

The proposed development is supported by existing road infrastructure that meets access and egress standards, ensuring efficient emergency response and safe evacuation. Furthermore, the APZs proposed within the PP are sufficient to provide appropriate setbacks from hazardous vegetation, reducing fire intensity and exposure to the built form. Collectively, these measures confirm that the PP is consistent with the objectives of PBP, providing a safe and resilient development outcome.

Given the low risk to the site from the north east, Blackash has provided modelled radiant heat levels. As part of the consultation process, the RFS provided radiant heat calculations (Appendix 5) to meet 10kW. This distance is 60m to the SFPP building in the north of the site and the concept plan has been redrawn to accommodate the RFS radiant heat determinations. Blackash has completed radiant heat calculations for building at Appendix 6 to achieve 29kW of radiant heat. This has been reflected in the building setback (Figure 2).

Blackash has completed the vegetation and slope assessment to determine the APZ and radiant heat load within the site. Given the PP is infill SFPP development and bushfire risk to the site from the north, north east and east is low and designated as Category 2 vegetation, Blackash have completed modelling to tighten up the APZ.

The modelling is based on the maximum probable fire scenario (PBP uses a 1:50 year weather and fire scenario) of concern is one burning on a day with an FFDI of 100 which is only likely from the west and burning within the narrow corridor of vegetation to the northeast of the site. To reach a FDI 100, the fire would have to be under the influence of a westerly or north westerly weather pattern to achieve the high temperatures, high wind speed and low relative humidity. A fire burning under this scenario will burn away from the site and any form of bushfire attack will be pushed away from the site.

Under a north-easterly wind influence with a lower FFDI, fire spread is moderate and influenced by topography rather than extreme bushfire weather conditions. While ember attack and localised fire fronts could impact bushland-adjacent suburbs, overall fire intensity is at the site manageable, reducing the likelihood of high impacts and loss.

There is no 'landscape scale' bushfire hazard that adjoins the site. Based on the limited potential for a fully developed fire to impact the site, Blackash has undertaken indicative modelling to provide an initial assessment of bushfire risk relevant to the proposed development. This preliminary analysis offers insights into potential radiant heat exposure, ember attack pathways, and broader bushfire impacts, forming the basis for early design considerations and risk mitigation strategies. For the PP, the indicative modelling has shown that the proposed buildings can be provided with appropriate separation and radiant heat loads in accordance with PBP at the buildings.

As the project progresses through subsequent DAs, a more detailed and comprehensive bushfire risk assessment will be conducted through the development of a Bushfire Design Brief. This document will serve as a key planning tool, outlining the primary bushfire risk factors, site-specific constraints, and recommended mitigation measures to enhance the resilience of the proposed development. The Bushfire Design Brief will incorporate refined modelling, site-specific bushfire behaviour analysis, and performance-based solutions where necessary to address complex design challenges.

The preparation of the Bushfire Design Brief will be undertaken in close consultation with the RFS to ensure that the proposed measures align with regulatory expectations, including compliance with the NSW Planning for Bushfire Protection (PBP) guidelines and the requirements of relevant planning legislation. Engagement with the RFS will facilitate a collaborative approach, allowing for early identification of any concerns or necessary refinements to ensure the final design appropriately responds to bushfire risks.

The rate of spread and the potential for short fire runs will be key considerations in discussions with the RFS as the project progresses to the DA stage. These insights will directly inform the detailed bushfire modelling undertaken at the DA stage. By incorporating refined data on fire behaviour, the modelling will provide a more accurate assessment of potential bushfire impact scenarios, supporting the development of performance-based solutions where required. The collaborative discussions with the RFS will facilitate a shared understanding of bushfire risks and mitigation strategies, ensuring that regulatory requirements and best-practice bushfire resilience measures are appropriately integrated into the final design.

This iterative and evidence-based approach will enhance the robustness of the bushfire risk assessment and contribute to the development of a DA submission that demonstrates compliance with NSW Planning for Bushfire Protection (PBP) guidelines, while also addressing site-specific constraints and opportunities for risk reduction.

Table 3 provides the APZs required in PBP for SFPP development and Table 4 for residential building. Modelled (indicative) APZs have been calculated by Blackash and are provided to assist RFS confidence that the PP can be supported with detailed work through a Bushfire Design Brief process to be completed at DA stage.

Table 3 APZs for SFPP Development

Aspect	Vegetation	Slope	PBP SFPP APZ (see Table 1)	Modelled APZ
North	NA residential development. Vegetation greater than 100m from site boundary			
Northeast	Forest. Category 2 vegetation	11.3° downslope	100m	60m See RFS modelling at Appendix 5

East	Forest. Category 2 vegetation	16.9° downslope	100m	57m
East	Forest. Category 2 vegetation	17.9° downslope	100m	57m
South East	Forest. Category 1 vegetation	8° downslope 5.7° downslope	93m	83m
South	Forest. Category 1 vegetation	5.7° downslope	93m	77m
South east	Forest/ Rainforest. Category 1 vegetation	4.6° downslope	93m	75m
West	NA residential development. No Bushfire Prone Land			

Table 4 APZ for Residential APZ – Building B on Figure 2

Aspect	Vegetation	Slope	PBP residential APZ acceptable solution	Modelled APZ
North	NA residential development. Vegetation greater than 100m from site boundary			
Northeast	Forest. Category 2 vegetation	11.3° downslope	45m	33m provides 27.16kW See Appendix 6
East	Forest. Category 2 vegetation	16.9° downslope	56m	Greater than 56m
East	Forest. Category 2 vegetation	17.9° downslope	56m	Greater than 56m
South East	Forest. Category 1 vegetation	8° downslope 5.7° downslope	36m	Greater than 36m

South	Forest. Category 1 vegetation	5.7° downslope	36m	Greater than 36m
South east	Forest/ Rainforest. Category 1 vegetation	4.6° downslope	29m	Greater than 29m
West	NA residential development. No Bushfire Prone Land			

The application is not seeking to extend or burden any adjoining land with any APZ. An APZ can rely on adjoining areas where they are managed and have a high degree of confidence in ongoing management.

PBP (p. 112) defines managed land as

Land that has vegetation removed or maintained to a level that limits the spread and impact of bush fire. This may include developed land (residential, commercial or industrial), roads, golf course fairways, playgrounds, sports fields, vineyards, orchards, cultivated ornamental gardens and commercial nurseries. Most common will be gardens and lawns within curtilage of buildings. These areas are managed to meet the requirements of an APZ.

An APZ to Inner Protection Area (IPA) standards is proposed within the site.

A comparative assessment has been undertaken by overlaying the Bushfire Prone Land map (Figure 3 and Figure 4) onto the site plan (Figure 2) to evaluate the extent of bushfire prone land extent into the site. The RFS Bushfire Prone Land Mapping Guidelines 2015 (p. 4) defines Bushfire Prone Area as:

An area of land that can support a bush fire or is likely to be subject to bush fire attack, as designated on a bush fire prone land map.

This analysis provides a clear spatial understanding of the site's exposure to bushfire attack and its classification under current bushfire planning regulations.

As illustrated in Figure 4, the assessment confirms that the buildings (with the exception of G4) are not directly affected by the buffers from the classified vegetation. Figure 4 demonstrates that if the proposed buildings were assessed as entirely new structures under current Section 4.14 of the EPA Act, they would not trigger bushfire-related planning requirements, as they are situated outside areas identified as bushfire-prone land.

The new RFS Guidance Document – Application of section 100B that was uploaded 23 July 2023.

The RFS Guideline document is at:

https://www.rfs.nsw.gov.au/__data/assets/pdf_file/0018/4617/Guidance-Document-Application-of-Section-100B-of-the-Rural-Fires-Act.pdf

This RFS document and the RFS briefing confirm that the development (ie building footprints) are not on designated Bushfire Prone Land, and as such, no bushfire considerations, reporting or referral to the RFS is required. The RFS Guideline document states:

Is a BFSA required for a SFPP of partially mapped bush fire prone land?

Not all SFPP developments located on a lot which is partially mapped as bush fire prone land constitute a development of bush fire prone land for a SFPP for the purposes of section 100B(1)(b) of the RF Act.

The proposed development is a development of bush fire prone land where it involves doing any of the acts, matters or things specified in section 1.5(1) of the EP&A Act, on the bush fire prone land portion of the land. It is only where any of those acts, matters or things are proposed to be done on the bush fire prone land portion of the land for a SFPP listed in section 100B(6) of the RF Act, that a BFSA will be required.

Cadastral (lot) boundaries are not relevant to the assessment of whether a development is on bush fire prone land.

This is a fundamental component of the NSW legislative framework for the consideration of bushfire risk on bushfire prone land.

As no part of the future development (apart from Building G4) is on Bushfire Prone Land. No consideration of bushfire is legislatively required, nor is referral to the RFS is required. The worked examples in the RFS Guidance document make the assessment requirements clear. The development will provide managed gardens and there are no public interest provisions relating to bushfire.

As there is no legislative trigger for the consideration of PBP or application of bushfire requirements to the proposed works, subsequent Das may not require a Bushfire Safety Authority from the RFS.

30. Bushfire Attack Levels

The Bushfire Attack Level (BAL) is a means of measuring the ability of a building to withstand attack from bushfire. The form of bushfire attack and the severity will vary according to the conditions (FFDI, vegetation, slope and setback) on the site.

The BAL assesses the severity of a building's potential exposure to ember attack, radiant heat and direct flame contact, using increments of radiant heat expressed in kilowatts per square metre. This forms the basis for establishing the requirements for construction to improve protection of a building from potential attack by a bushfire, as defined in *Australian Standard AS 3959-2018 Construction of buildings in bushfire-prone areas*. The BAL ratings are used as the basis for establishing the requirements for construction for future buildings to improve protection from bushfire attack.

The BAL ratings across the site will be determined in subsequent development applications and are not a requirement of a PP.

The proposed public open space (Figure 10) identified within the development, including the heritage garden and associated landscaped areas, will be established and maintained as managed land. These areas will consist of irrigated lawns, low-fuel plantings, and regularly maintained gardens that will not support the accumulation of hazardous bushfire fuels. As such, they will function as an effective APZ, providing a defendable area that separates buildings from unmanaged vegetation and reduces potential bushfire attack.

Ongoing maintenance will include routine mowing, removal of fine fuels, pruning of canopy trees to maintain separation, and management of garden structures to minimise fire spread. This approach ensures the open space remains safe for use while meeting the performance and intent of the APZ requirements under PBP 2019.

31. The proposed land use zones and permitted uses

The planning proposal responds to the site and considers bushfire constraints in relation to the proposed likely uses for permanent conservation land and development. This complies with PBP.



Figure 10 Proposed Open Space - Managed Land

32. The most appropriate siting of different land uses based on risk profiles within the site

The most appropriate siting of different land uses based on risk profiles within the site involves considering various factors related to land use planning and bushfire risk management, particularly concerning mitigating the impacts of natural hazards like bushfires.

The buildings have been strategically positioned to maximize their separation from the bushfire-prone land while still complying with the broader requirements of the Planning Proposal, including land use, neighbourhood amenity, accessibility, and environmental considerations. The ancillary use and residential building (Building B – see Figure 2) has been located closest to the bushfire hazard in the northeast, serving as a protective barrier for the other structures on the site. This placement helps to mitigate potential ember attack and radiant heat exposure for the more vulnerable occupants of Buildings A, C and D (see Figure 2) buildings by leveraging the residential structure as a radiant heat shield.

Additionally, all buildings are interconnected by a common underground basement area, which serves multiple critical functions. This basement provides a protected means of egress, enhancing

safety by allowing occupants to evacuate without direct exposure to external bushfire hazards. It also facilitates the movement of people within the site, ensuring seamless access between buildings while minimising outdoor travel in an emergency situation. The basement design further supports operational efficiency, potentially housing essential infrastructure and services in a more controlled environment, reducing exposure to fire risk.

Emergency services are able to access the external parts of the site via the existing perimeter road network, including Barons Crescent and High Street. This road system ensures efficient movement for firefighting and emergency response vehicles, providing multiple points of access for rapid intervention. The design allows for safe approach and staging areas, facilitating operations such as fire suppression, property protection, and potential evacuations. The perimeter road also enhances overall site resilience by maintaining clear access routes even in the event of a bushfire emergency.

Operationally, there is a limited area of unmanaged Category 2 vegetation adjacent to 80 Barons Crescent. This area, while posing some bushfire risk, can be directly accessed by fire services if required. The existing road network and site design enable emergency personnel to reach this vegetation efficiently, allowing for rapid intervention should fire suppression or hazard reduction measures be necessary. This accessibility supports ongoing risk management and enhances the site's overall fire resilience.

High Street has a longer frontage to Category 1 forest vegetation, which presents a higher bushfire risk. However, this area is accessible via the road network or through the designated and maintained Asset Protection Zone (APZ). The APZ serves as a strategic buffer, reducing fire intensity and providing a defensible space for firefighting operations. This controlled interface between the development and the forest vegetation enhances fire management capabilities while minimising potential impacts on the site.

The new buildings of the PP have been positioned as far as practicable from bushfire-prone land to comply with the requirements of PBP. This strategic siting minimises exposure to bushfire hazards while balancing other planning considerations such as land use efficiency, accessibility, and environmental constraints. The layout prioritises occupant safety and fire fighter intervention, reduces the risk of direct flame contact, ember attack, and radiant heat exposure, and enhances the overall resilience of the development against bushfire threats.

33. The impact of the siting of these uses on APZ provision.

The planning proposal responds to the site and considers bushfire constraints in relation to the proposed uses.

As the site is an existing development, the site and PP are afforded flexibility as infill development. This allows for a more adaptable approach to bushfire risk mitigation while still aligning with the principles of PBP. The infill nature of the project enables a balance between meeting modern bushfire safety standards and integrating with the established built environment, infrastructure, and surrounding land uses.

The siting of buildings has been carefully planned to maximize separation from unmanaged vegetation, reducing exposure to bushfire hazards. Additionally, the site will be managed as an APZ, ensuring that vegetation is maintained in a low-fuel state to minimize fire intensity and improve the defendability of buildings. This approach enhances overall site resilience while providing a practical and effective means of bushfire risk management.

The uses have been sited to meet the APZ requirements of PBP. This complies with PBP.

34. The location of key access routes and direction of travel

The proposal will provide two vehicle access points to the site (Figure 2), one of which is the existing vehicle access point on High Street and the other is from a new (relocated) access point on Barons Crescent. Trips generated to/from the site will also be distributed evenly between the two entry points to the site based on the location of the car parking spaces relative to the location of elevators in the basement.

The peak periods for the trip generation to and from the site will likely be outside of the general network commuter peak periods given that staff work on a shift-based roster, residents of the ILUs are likely retired and would typically travel outside of network commuter peak periods and the residents of the existing RACF to be retained do not own private vehicles. The traffic impacts of this Planning Proposal are negligible.

The majority of trips away from the site will be towards Ryde Road, based on staff returning home from their shifts and residents departing the site to undertake activities. Some trips during the site peak period have been distributed towards the Boronia Park town centre, acknowledging that residents may choose to shop in this local centre as there are two supermarkets.

The car parking provision provided by the Planning Proposal complies with the relevant controls in the TfNSW Guide to Traffic Generating Developments and the SEPP Housing. This provision sufficiently caters for staff, residents, and visitors within the site, removing the need for staff and

visitors to park on Barons Crescent, Gaza Avenue and High Street. This will reduce the existing traffic impact the site has on the local road network and will 'free up' on-street parking for other local residents.

The proposed development will have a negligible traffic impact on the surrounding road network because:

- The proposed development will not exceed the environmental capacity limits for local roads set out by TfNSW.
- The impact of parking will be reduced as all parking will be contained on-site.
- The impact of service vehicles will be negligible as it is unlikely that there will be an increase in the number of service vehicles accessing the site.
- Safety is improved for service vehicles using Barons Crescent due to the addition of a turning bay within the proposed service area, allowing forward-in and forward-out movements.

Figure 11 illustrates the primary access routes within the study area, highlighting their spatial arrangement, connectivity, and functional role in facilitating movement. It identifies key entry and exit points, as well as the designated travel directions for vehicles and emergency services. Figure 11 also provides an overview of road classifications, potential constraints such as terrain or bottlenecks, and any alternative routes available. The directional indicators help in understanding traffic flow, evacuation pathways, and access considerations for emergency response planning.

Access to and from the site is not significantly constrained by bushfire risk, as the existing road network provides multiple safe and reliable routes for evacuation and emergency response (Figure 12). The surrounding developed areas further enhance safety by serving as potential areas of refuge, offering cleared, low-fuel (managed land) environments that will not carry a bushfire. These developed zones, consisting of residential, open space (Boronia Park) and developed precincts, create defensible spaces that can act as buffers against bushfire impacts.

However, a narrow pinch point (approximately 30 metres) at 80 Barons Crescent presents a potential constraint, which may impact traffic flow during an emergency. This section of the road presents limited potential for fire impact. Any bushfire within the adjacent vegetation is expected to be short-lived with minimal spread, meaning it is unlikely to affect traffic flow. As a result, this localised constraint does not present a significant barrier to safe evacuation or emergency access. While this could slow evacuation or emergency vehicle access, the overall road network remains sufficient to support safe movement, and the availability of alternative routes mitigates the impact of this localized restriction.



Legend

- Access
- Major Road
- Minor Road
- Path
- Buffer - 2km
- Subject Site



DKGIS

Date: 25/03/2025

0 125 250

Meters

Coordinate System: GDA2020 MGA Zone 56

Imagery: © Nearmap

Figure 11 Access Routes

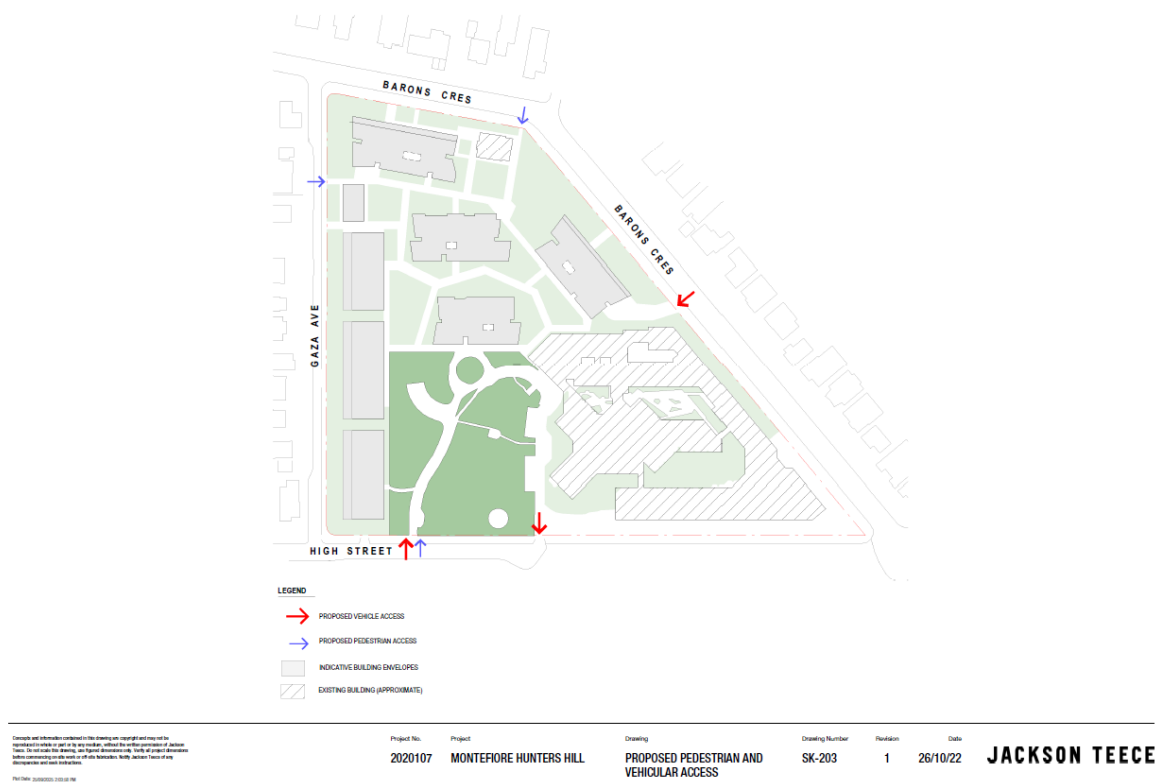


Figure 12 Access Into and Out of the Site

35. The potential for development to be isolated in the event of a bushfire

The site is not isolated development as defined by PBP (p111):

Development which is located predominantly in native bushland or is considered to be within a remote area. Access and evacuation may be challenging due to distances that are required to be travelled through bush fire prone areas.

The development is not in a remote area and the wider area is developed and managed land which is not capable of carrying an uncontrolled bushfire.

Figure 13 illustrates the extent of managed land within the study area, which includes areas where vegetation is regularly maintained, fuel loads are reduced, and fire management strategies are actively implemented. This managed land, consisting of parks, cleared open spaces, roads, and developed properties, lacks the necessary fuel continuity to sustain or propagate a bushfire. As a result, these areas do not present a significant fire hazard and are managed land, acting as breaks that can help limit fire spread.

PBP (p. 112) defines managed land as:

Land that has vegetation removed or maintained to a level that limits the spread and impact of bush fire. This may include developed land (residential, commercial or industrial), roads, golf course fairways, playgrounds, sports fields, vineyards, orchards, cultivated ornamental gardens and commercial nurseries. Most common will be gardens and lawns within curtilage of buildings. These areas are managed to meet the requirements of an APZ.

The presence of managed land contributes to overall bushfire mitigation by reducing the intensity and extent of potential fire activity, thereby enhancing the safety of both the study area and surrounding developments.

There are multiple routes (Figure 12) for firefighting resources to access the site and all routes are unlikely to be impassable by firefighting vehicles.

This complies with PBP.



Legend

- Buffer - 700m
- Buffer - 2km
- Subject Site
- Managed Lands



Date: 25/03/2025



Coordinate System: GDA2020 MGA Zone 56
Imagery: © Nearmap

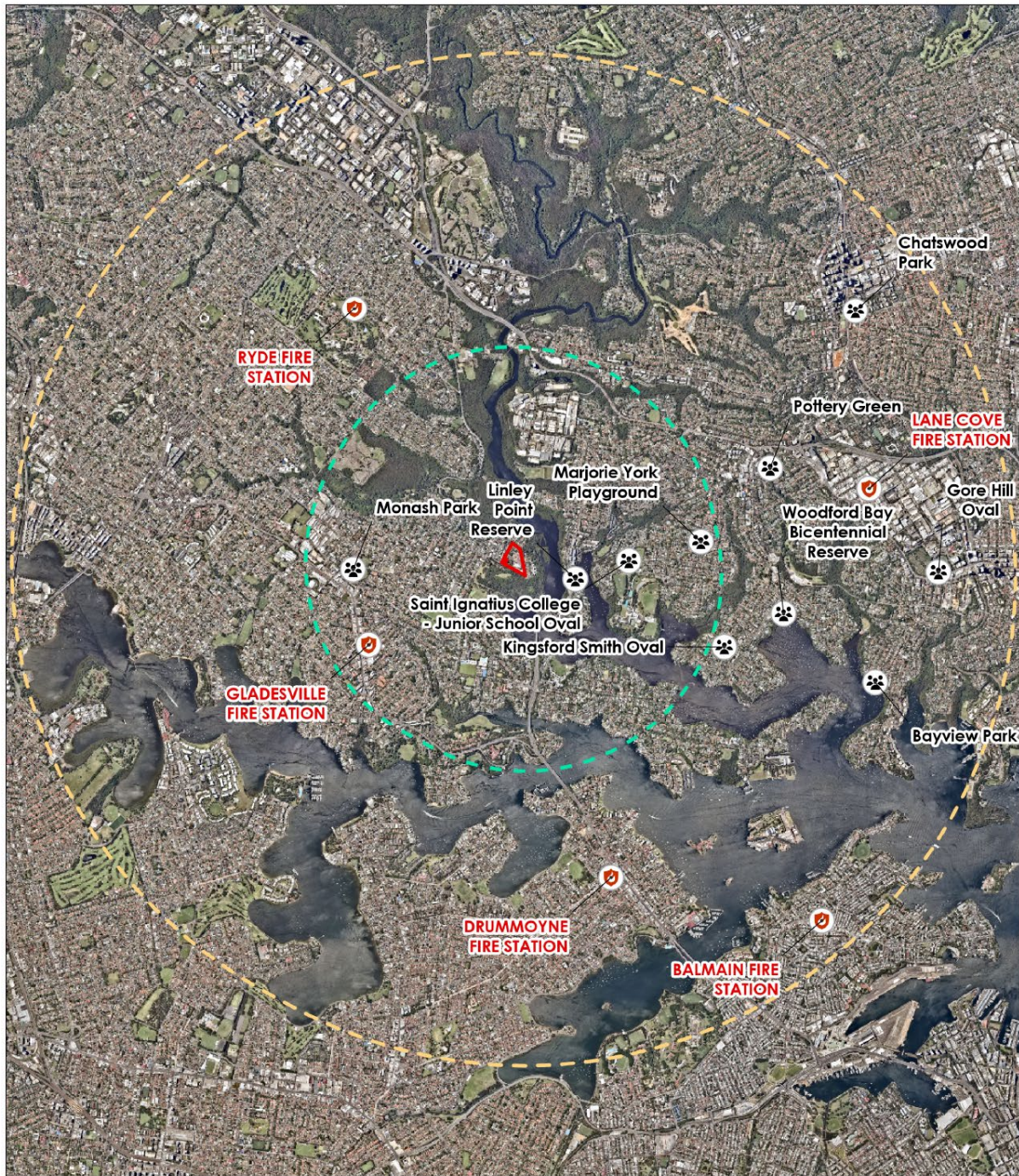
Figure 13 Managed Lands

36. Emergency services

The consideration of the increase in demand for emergency services responding to a bushfire emergency including the need for new stations/brigades has been completed.

There are substantial existing firefighting resources available to support the Planning Proposal (PP) area, including multiple Fire and Rescue NSW stations located in close proximity (Figure 14). These stations are well-equipped and strategically positioned to provide rapid response capabilities in the event of a bushfire or structural fire emergency. Given the established presence of these emergency services, the scale of development proposed within the PP area is not expected to place additional strain on firefighting resources or necessitate the establishment of new emergency service facilities.

In addition to the strong emergency response capacity, numerous designated Neighbourhood Safer Places (NSPs) are available within the surrounding area (Figure 14), providing designated last-resort refuge locations for residents and visitors in the event of a bushfire. These NSPs, combined with the existing firefighting infrastructure and well-maintained road networks, further enhance community safety and resilience by ensuring that safe evacuation and sheltering options are readily accessible. The developed nature of the surrounding areas also contributes to fire protection measures, reducing the likelihood of large-scale fire spread and enabling effective fire suppression efforts within the region. The PP complies with the requirements of PBP.



Legend

- Neighbourhood Safer Place
- Fire and Rescue NSW
- Study Area - 5km buffer of Subject Site
- Buffer - 2km
- Subject Site

N

DKGIS

Date: 25/03/2025

0 1 2
Kilometers

Coordinate System: GDA2020 MGA Zone 56
Imagery: © Nearmap

Figure 14 Emergency Services

37. Impact on the ability of emergency services to carry out fire suppression in a bush fire emergency

Bushfires have occurred in Australia for thousands of years and will continue to occur. Climate change modelling predicts increasing frequency and severity of fire events correlating with altered rainfall and drought patterns and increasing numbers of severe and intense heat events. As the dryness of more areas increases beyond levels historically considered 'normal', the footprint of areas with a propensity to burn are likely to increase, which increases the importance of new development complying with the minimum bushfire safety standards set out by the NSW Government and RFS in PBP.

Not all bushfires lead to loss of life or assets. Bushfires of low to moderate intensity often pose little threat to life, property and community assets. Fire agencies are very successful at extinguishing low to moderate intensity fires before they lead to injury or death.

The risk is greatest when fire occurs on hot, dry windy days, and where ignition occurs in heavy fuels, and in steep terrain. These conditions present fire that can spread rapidly, crown in forests, produce powerful convection columns and create extensive spot fires ahead of the fire front. This often makes their control impossible until weather conditions moderate. PBP is predicated on a probable worst case fire scenario of FFDI 100. Similarly, the NCC and AS3959/NASH provide deemed to satisfy solutions for fires up to and including FFDI 100. Fires above FFDI 100 are possible in this Fire Weather District and fire services have significant notice periods (at least 4 days) from the Bureau of Metrology (BoM) of these catastrophic conditions.

However, the national and NSW framework provides a robust policy setting for new development in Bushfire Prone Areas. The AFAC Community Safety Position Paper⁶ notes that:

Prevention measures are the most cost-effective and efficacious means of reducing bushfire risk to life and property. Land-use planning as a prevention intervention can significantly impact risk, by directing settlement growth and development to areas of lowest bushfire risk and avoiding settlement and development in areas of highest bushfire risk.

⁶ P. 4 Australasian Fire and Emergency Services Authorities Council. (2019) *Bushfires and Community Safety Position* (AFAC Publication No. 2028)

Planning policy frameworks can strengthen the resilience of settlements and communities and prioritise the protection of human life by putting in place requirements for Planning Proposals and decision making.

Land-use planning underpins and sets preconditions for all other emergency management interventions in future developments.

Firefighting will be facilitated by the PBP compliant APZ, additional water supplies and improved site access. All future development within the site will be built in accordance with PBP, the National Construction Code (NCC) and AS3959/NASH which increase the resilience of buildings to the impacts of bushfires. Onsite water and underground services will further assist firefighting.

The PP will have no negative impact on emergency services to undertake fire suppression and is likely to assist through additional access, water supplies and vegetation fragmentation. The PP will also provide a significant improvement in bushfire safety for the adjoining properties which have been approved and constructed prior to 2002 and the development of any bushfire protection standards consistent with contemporary practice.

Modern firefighting arrangements are better coordinated than in previous decades, and have the use of more resources including fire mapping, bulk water tankers, heavy plant (e.g. bulldozers and graders), helicopters and Large Air Tankers (LATS) that are much more readily available, and these enable a major addition to firefighting capabilities, especially on bad fire weather days. Substantial improvements to Operational Readiness systems on bad fire weather days means any fire at the site will have an efficient and effective response.

All these characteristics mean that when such fires are ignited there is a relatively quick and effective response meaning that the fire is unlikely to grow to a significant scale. This is not to say that very difficult fire weather days or resources being used elsewhere don't have an impact, simply that there is a low likelihood of any significant fire impacting the study area, and such local fires are likely to be managed with local resources as part of normal emergency operations. Large landscape fires will develop over days or weeks providing emergency managers with time to determine appropriate combat strategies, including evacuation of residents if required.

The Hunters Hill Lane Cove Parramatta Ryde Risk Plan notes that:

The Hunters Hill Lane Cove Parramatta Ryde BPMC area has on average 8 bushfires per year, of which none can be considered a major fire.

38. Infrastructure - The ability of the reticulated water system to deal with a major bush fire event in terms of pressures, flows, and spacing of hydrants

The subsequent development application will detail provisions for services. There is no reason to suggest the reticulated system will not be able to service the proposed development. Should there be any concerns raised over the capability of the reticulated system negotiations for upgrades or alternate solutions should be determined at that stage of the process. This complies with PBP.

39. Life safety issues associated with fire and proximity to high voltage power lines, natural gas supply lines etc.

There are no issues identified with high voltage power lines and gas supply mains. Specific details will be managed during subdivision development stage. However, it is expected that all local services will be provided underground. Electricity supply for the new development will comply with PBP. 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. This complies with PBP.

40. Adjoining land - Consideration of the implications of a change in land use on adjoining land including increased pressure on BPMs through the implementation of Bush Fire Management Plans

The future development will have no implications for the management of the retained vegetation or practices on the adjoining land.

All new development within the site will be designed to meet the minimum standards of PBP which achieve an appropriate level of bushfire resilience. The PP does not seek or rely on the provision of off-site APZs or other off-site BPM. The future development will not burden or change the existing obligations or management actions of neighbours.

This complies with PBP.

41. Summary

This Section evaluates the Planning Proposal against the bushfire strategic planning requirements of PBP and is shown in Table 5.

Table 5 Strategic bushfire study - compliance with PBP Table 4.2.1

Issue	Detail	Assessment considerations	Evidence	Suitable site
Bush fire landscape assessment	A bushfire landscape assessment considers the likelihood of a bush fire, its potential severity and intensity and the potential impact on life and property in the context of the broader surrounding landscape.	The bushfire hazard in the surrounding area including: Vegetation Topography Weather	Landscape Scale Assessment Tool, Bush Fire Risk Management Plan review, Asset Protection Zone modelling and consideration of BPMs.	YES
		The potential fire behaviour that might be generated based on the above	Fire history map and fire run map completed. Assessment has been completed in accordance with fires up to Catastrophic Fire Danger Rating as required within PBP.	YES
		Any history of bush fire in the area.	Significant fire history in the area. The PP can comply with PBP requirements.	YES

Issue	Detail	Assessment considerations	Evidence	Suitable site
		Potential fire runs into the site and the intensity of such fire runs; and	Fire history map and fire run map completed. Assessment has been completed in accordance with fires up to Catastrophic Fire Danger Rating as required within PBP.	YES
		The difficulty in accessing and suppressing a fire, the continuity of bush fire hazards or the fragmentation of landscape fuels and the complexity of the associated terrain.	No identified difficulties for accessing and suppressing the type of fires that may occur here. Acceptable terrain and consistent vegetation generally, good local road network.	YES
Land use assessment	The land use assessment will identify the most appropriate locations within the masterplan area or site layout for the proposed land uses.	The risk profile of different areas of the development layout based on the above landscape study	The risk profile of the site is minimal and the scale of the site provides ample opportunity to provide a suitable suite of BPM.	YES
		The proposed land use zones and permitted uses	The proposed development is a suitable and practical use of the land.	YES

Issue	Detail	Assessment considerations	Evidence	Suitable site
		The most appropriate siting of different land uses based on risk profiles within the site (i.e. not locating development on ridge tops, SFPP development to be located in lower risk areas of the site); and the impact of siting on APZ provision.	The risk profile of the site is minimal and the scale of the site provides ample opportunity to provide a suitable suite of BPM.	YES
Access and egress	A study of the existing and proposed road networks both within and external to the masterplan area or site layout.	The capacity for the proposed road network to deal with evacuating residents and responding emergency services, based on the existing and proposed community profile;	A shelter in place strategy will be the primary method of managing life safety for the site. This will be supported by the layout, parking arrangements and compliance with PBP.	YES
		The location of key access routes and direction of travel; and	The access is protected from bushfire through managed lands and APZ. Multiple external access points are provided (three) with internal access through the site.	YES

Issue	Detail	Assessment considerations	Evidence	Suitable site
		The potential for development to be isolated in the event of a bush fire.	There is little chance of isolation due to arterial road connection. Short duration road closures may be implemented by emergency services to the east of the site.	YES
Emergency services	An assessment of the future impact of new development on emergency services.	Consideration of the increase in demand for emergency services responding to a bush fire emergency including the need for new stations/brigades; and	Not likely that new emergency services generated by this development alone.	YES
		Impact on the ability of emergency services to carry out fire suppression in a bush fire emergency.	Insignificant negative impact. Will have positive impact with more local population, water supplies, and active land management adjacent to existing housing not built to contemporary bushfire standards.	YES
Infrastructure	An assessment of the issues associated with infrastructure and utilities.	The ability of the reticulated water system to deal with a major bush fire event in terms of pressures, flows, and spacing of hydrants; and	To be considered at DA stage – water supplies will be conditioned as suitable for uses and locations on site.	YES

Issue	Detail	Assessment considerations	Evidence	Suitable site
		Life safety issues associated with fire and proximity to high voltage power lines, natural gas supply lines etc.	No life safety issues identified.	YES
Adjoining land	The impact of new development on adjoining landowners and their ability to undertake bush fire management.	Consideration of the implications of a change in land use on adjoining land including increased pressure on BPMs through the implementation of Bush Fire Management Plans.	No negative impact identified. Potential positive impact related to additional people, active land management and investment locally.	YES

42. Suitability of the Planning Proposal

This SBS has demonstrated that the PP has considered and responded to the requirements of the Ministerial Direction and PBP. In a bushfire context, PBP (p. 34) requires that *strategic planning must ensure that future land uses are in appropriate locations to minimise the risk to life and property from bush fire attack. Services and infrastructure that facilitate effective suppression of bushfires also need to be provided for at the earliest stages of planning.*

The bushfire risk has been considered at the macro-scale, looking at fire runs, slopes, fire behaviour, bushfire attack into the site and it has addressed the access and evacuation requirements of PBP. At a site level, a detailed site assessment has been completed in accordance with PBP.

This section assesses the broad principles outlined within PBP (p. 34) which are at Table 3 and the consideration of exclusion of development as required within PBP (p. 34) at Table 6.

Table 6 Strategic Principles

Principle within PBP	Comment	Compliance
Ensuring land is suitable for development in the context of bushfire risk	The Planning Proposal demonstrates compliance with the deemed to satisfy requirements of PBP in all BPM, with detail for some BPM to be provided at development application stage. The bushfire risk has been considered at FFDI 100 as required by PBP and the risk to future occupants and emergency services can be managed by meeting the requirements of PBP.	Yes
Ensuring new development on BPL will comply with PBP	The Planning Proposal meets the requirements of PBP. Future development is able to meet the standard of <29kW/m ² radiant heat at building exposures for residential development and 10kWm ² for SFPP development. Roads and APZs can comply with relevant sections of PBP.	Yes

Principle within PBP	Comment	Compliance
Minimising reliance on performance-based solutions	Given the site constraints and the narrow band of Category 2 Bushfire Prone Land to the north east of the site, a performance-based solution have been used for the calculation of radiant heat.	Yes
Providing adequate infrastructure associated with emergency evacuation and firefighting operations	The development footprint, APZ and additional water supplies will be of significant benefit to existing adjoining housing not built to bushfire protection standards. All services can be provided in accordance with Table 5.3c of PBP.	Yes
Facilitating appropriate ongoing land management practices	The future development will not burden or change the existing obligations or management actions of neighbours.	Yes

Table 7 Exclusion of Development

Principle within PBP	Comment	Compliance
The development area is exposed to a high bush fire risk and should be avoided	The landscape bushfire risk is low (Table 1). The site is not impacted by landscape scale bushfires. The new development can be designed to comply with the minimum requirements of PBP, and the risk has been managed to the appropriate level required by PBP.	Yes
The development is likely to be difficult to evacuate during a bush fire due to its siting in the landscape, access limitations, fire history and/or size and scale	The planning proposal site is in a low risk area and the scale of development will allow for shelter in place strategy or evacuation using the below ground basement car park.	Yes

Principle within PBP	Comment	Compliance
The development will adversely effect other bush fire protection strategies or place existing development at increased risk	All new development within the site will be designed to meet the minimum standards of PBP which achieve an appropriate level of bushfire resilience. The Planning Proposal does not seek or rely on the provision of off-site APZs or other BPM. The development will not burden or change the existing obligations or management actions of neighbours. The development will provide a positive impact to adjoining neighbours by permanently removing a bushfire hazard and provide ongoing active management.	Yes
The development is within an area of high bushfire risk where density of existing development may cause evacuation issues for both existing and new occupants	The proposal will allow for PBP compliant APZ on site, a shelter in place strategy can be adopted with modern construction requirements of the National Construction Code. The catchment of people using the road network is limited and it is not expected that the PP will impact the capacity of roads.	Yes
The development has environmental constraints to the area which cannot be overcome	The environmental constraints have been considered and assessed separately. The Planning Proposal layout reflects the environmental constraints.	Yes

43. Conclusion

This Strategic Bushfire Study considers the suitability of the Planning Proposal with respect to bushfire risk within and affecting the site.

The Planning Proposal provides a highly suitable application that can respond to the bushfire risk affecting the site and which will satisfy the Aim, Objectives and requirements within PBP to provide for the protection of life and the minimisation of impact on property while having due regard to the development potential, site characteristics and protection of the environment.

As required by PBP (p. 34), this Strategic Bush Fire Study provides the opportunity to assess whether new development is appropriate in the bush fire hazard context. It provides the ability for various stakeholders to assess the strategic implications of future development for bushfire mitigation and management. Chapter 4 of PBP provides high level heads of consideration for new PPs which are summarised:

- the development area is not exposed to a high bush fire risk and as a result is viable to the proposed PP. The bushfire risk is not sufficient that development of the site should be avoided;
- the development is not likely to be difficult to evacuate during a bushfire due to its siting in the landscape. There are no access limitations and underground protected access and egress is provided by the basement carpark. The site has limited fire history and the potential of any fires to fully develop and impact the site is limited;
- the development will not adversely effect other bushfire protection strategies or place existing development at increased risk;
- the development is not within an area of high bush fire risk where density of existing development may cause evacuation issues for both existing and new occupants as multiple egress options are available from the site included protected egress via the below ground basement car park.
- the site has existing development and there are no known environmental constraints to the site which cannot be overcome.

This SBS has provided a detailed assessment of bushfire risk and followed the Aim and Objectives of PBP, Section 2.3 Strategic Planning, and specifically addressed the requirements of Chapter 4 – Strategic Planning. In meeting the requirements of PBP, the PP also satisfies the requirements of the *Ministerial Direction 4.3 Planning for Bushfire Protection*. The suitability of the Planning Proposal has considered the broad land scape scale risk and the site-specific requirements of PBP.

Chapter 4 of the Planning for Bushfire Protection guidelines outlines the key considerations for rezonings, emphasising a risk-based assessment approach to evaluate the bushfire exposure of the PP. This assessment demonstrates that the proposed development is capable of meeting the bushfire protection measures outlined in PBP, particularly in relation to Asset Protection Zones (APZs) and access requirements for emergency services and evacuating residents. A fundamental component of this process is determining whether the proposed land use and layout can effectively manage bushfire risk through appropriate separation distances, defensible spaces, and reliable evacuation routes.

As demonstrated throughout this report, the bushfire risk associated with the PP aligns with the requirements of PBP, with adequate provisions in place to mitigate potential impacts. The proposed development is supported by existing road infrastructure that meets access and egress standards, ensuring efficient emergency response and safe evacuation. Furthermore, the APZs proposed within the PP are sufficient to provide appropriate setbacks from hazardous vegetation, reducing fire intensity and exposure to the built environment. Collectively, these measures confirm that the PP is consistent with the objectives of PBP, providing a safe and resilient development outcome.

The PP can satisfy the detailed criteria to be assessed at the next stage of the process. All future development will be supported by APZ to meet the minimum standard of $<29\text{kW/m}^2$ at building exposures for the ancillary and residential use building and 10kWm^2 for the SFPP buildings and will be further assessed at development application stage. The PP meets the requirements of PBP and should be supported with respect to bushfire risk management.

In the authors professional opinion, the Planning Proposal is a suitable use of the land, and the bushfire protection measures demonstrated in this report comply with the Aim and Objectives of *Planning for Bush Fire Protection 2019, the Ministerial Direction 4.3 Planning for Bush Fire Protection*, and allow for the issue of approval with respect to bushfire matters.



Lew Short | Principal

Blackash Bushfire Consulting

B.A., Grad. Dip. (Design for Bushfires); Grad. Cert. of Management (Macq); Grad. Cert.

(Applied Management); Fire Protection Association of Australia BPAD Level 3 BPD-PA 16373



Appendix 1 References

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Appendix 2 Curriculum Vitae



Curriculum Vitae

Lew Short

Director BlackAsh Bushfire Consulting

T: 0419 203 853 E: lew.short@blackash.com.au

Summary

Lew is an experienced leader in the government and emergency sector. He has an intimate knowledge of the workings of government and how emergency service organisations operate. He is not only a technical expert but a practitioner who has deep industry knowledge.

Lew has extensive experience providing national leadership in building community resilience representing AFAC and the FPAA. Lew's technical expertise is in bushfire consequence management, risk assessment and mitigation, specifically the planning and design of new developments in high bushfire risk areas to comply with legislative and planning requirements.

Lew has worked with some of Australia's leading organisations including NSW Rural Fire Service, Country Fire Authority, Emergency Management Victoria, Lend Lease, Mirvac, Victorian State and Local Governments, Sydney Water Corporation, Great Lakes and Warringah Councils. Lew has completed numerous industrial development assessments and assessments of new development in rural areas NSW.

Lew has a deep operational understanding of how [fire works](#) in the Australian landscape. He has multifaceted insight into how governments respond to this threat. Lew provides unique strategies to comply with regulatory requirements and safety outcomes.

Lew established and led the Community Resilience Group for the New South Wales Rural Fire Service (RFS). His areas of responsibility included land use planning, community engagement, education, vulnerable communities, bunkers, Neighbourhood Safer Places, business systems and projects, social media, integrated risk management and environmental management. He was responsible for the establishment, [management](#) and leadership of the development assessment function for the RFS at a State level where he was responsible for the assessment of over 80,000 development applications in Bush Fire Prone Areas.

Areas of Expertise

- Rezoning and strategic studies
- Industrial development assessment
- Landuse planning & consequence management
- Legal strategy, Land & Environment Court and Expert Witness
- Bushfire planning, design & construction requirements in accordance with National Standards
- Bushfire Prone Mapping, hazard mapping and risk assessments
- Australian Standard AS3959 Construction of Buildings in Bushfire Prone Areas
- Bushfire Management Plans
- Alternative & [performance based](#) solutions
- Evacuation planning and implementation
- Technical and Strategic advice



Qualifications / Accreditation

BPAD Level 3 Accredited Practitioner
Fire Protection Association of Australia

Graduate Diploma of Bush Fire Design
University of Western Sydney, 2006

Graduate Certificate of Applied Management
Australian Institute of Police Management, 2005

Graduate Certificate of Management Macquarie
Graduate School of Management Macquarie University, 2001

Bachelor of Arts, Resource and Environmental Management
Macquarie University, 1994

Appendix 3 EP&A Act 1979 – Section 9.1 Ministerial Direction

4.3 Planning for Bushfire Protection

Objectives

The objectives of this direction are to:

- (a) protect life, property and the environment from bush fire hazards, by discouraging the establishment of incompatible land uses in bush fire prone areas, and
- (b) encourage sound management of bush fire prone areas.

Application

This direction applies to all local government areas when a relevant planning authority prepares a planning proposal that will affect, or is in proximity to, land mapped as bushfire prone land.

This applies where the relevant planning authority is required to prepare a bush fire prone land map under section 10.3 of the EP&A Act, or, until such a map has been certified by the Commissioner of the NSW Rural Fire Service, a map referred to in Schedule 6 of that Act.

Direction 4.3

- (1) In the preparation of a planning proposal the relevant planning authority must consult with the Commissioner of the NSW Rural Fire Service following receipt of a gateway determination under section 3.34 of the Act, and prior to undertaking community consultation in satisfaction of clause 4, Schedule 1 to the EP&A Act, and take into account any comments so made.
- (2) A planning proposal must:
 - (a) have regard to *Planning for Bushfire Protection 2019*,
 - (b) introduce controls that avoid placing inappropriate developments in hazardous areas, and
 - (c) ensure that bushfire hazard reduction is not prohibited within the Asset Protection Zone (APZ).
- (3) A planning proposal must, where development is proposed, comply with the following provisions, as appropriate:
 - (a) provide an Asset Protection Zone (APZ) incorporating at a minimum:
 - i. an Inner Protection Area bounded by a perimeter road or reserve which circumscribes the hazard side of the land intended for development and has a building line consistent with the incorporation of an APZ, within the property, and
 - ii. an Outer Protection Area managed for hazard reduction and located on the bushland side of the perimeter road,
 - (b) for infill development (that is development within an already subdivided area), where an appropriate APZ cannot be achieved, provide for an appropriate performance standard, in consultation with the NSW Rural Fire Service. If the provisions of the planning proposal permit Special Fire Protection Purposes (as defined under section 100B of the *Rural Fires Act 1997*), the APZ provisions must be complied with,
 - (c) contain provisions for two-way access roads which links to perimeter roads and/or to fire trail networks,
 - (d) contain provisions for adequate water supply for firefighting purposes,
 - (e) minimise the perimeter of the area of land interfacing the hazard which may be developed,
 - (f) introduce controls on the placement of combustible materials in the Inner Protection Area.

Consistency

A planning proposal may be inconsistent with the terms of this direction only if the relevant planning authority can satisfy the Planning Secretary (or an officer of the Department nominated by the Secretary) that the council has obtained written advice from the Commissioner of the NSW Rural Fire Service to the effect that, notwithstanding the non-compliance, the NSW Rural Fire Service does not object to the progression of the planning proposal.

Issued to commence 1 March 2022 (replaces previous Direction 4.4)

Appendix 4 Gateway Determination



Department of Planning, Housing and Infrastructure

Gateway Determination

Planning proposal (Department Ref: PP-2023-1109): The Montefiore Seniors Living Planning Proposal; 116-120 High Street, 2-20 Gaza Avenue and 45-47 Barons Crescent, Hunters Hill

I, the Director at the Department of Planning, Housing and Infrastructure, as delegate of the Minister for Planning and Public Spaces, have determined under section 3.34(2) of the *Environmental Planning and Assessment Act 1979* (the Act) that an amendment to the Hunters Hill Local Environmental Plan 2012 to rezone the site from R2 Low Density Residential to SP2 Infrastructure (Seniors Housing) and increase the maximum building height and the floor space ratio, should proceed subject to the following:

The LEP should be completed on or before 5 May 2025.

Gateway Conditions

1. Prior to exhibition, the planning proposal is to be updated to:
 - (a) Carry out consultation with the NSW Rural fire Service (RFS) to inform the planning proposal so that it addresses the potential overall increase in occupancy numbers on the site and can demonstrate the ability to achieve compliance with the relevant performance criteria in Section 6.4 in 'Planning for Bushfire Protection 2019'.

The planning proposal is to be updated to address the consistency with Section 9.1 Direction 4.3 Planning for Bushfire Protection and demonstrate justification for the planning proposal.
 - (b) Address consistency with 9.1 Direction 5.1 – Integrating Land Use and Transport through an assessment against the objectives of Direction and the aims, objectives and principles of:
 - i. Improving Transport Choice|– Guidelines for planning and development (DUAP 2001), and
 - ii. The Right Place for Business and Services – Planning Policy (DUAP 2001).
 - (c) Include an updated timeline based on the issuing of the Gateway determination.
2. Prior to community consultation, the planning proposal is to be revised to address the above conditions and forwarded to the Department for review and approval.
3. That the site-specific development control plan (DCP) be exhibited with the planning proposal.
4. Public exhibition is required under section 3.34(2)(c) and clause 4 of Schedule 1 to the Act as follows:
 - (d) the planning proposal is categorised as complex as described in the *Local Environmental Plan Making Guideline* (Department of Planning and Environment,

August 2023) and must be made publicly available for a minimum of 30 working days; and

- (e) the planning proposal authority must comply with the notice requirements for public exhibition of planning proposals and the specifications for material that must be made publicly available along with planning proposals as identified in *Local Environmental Plan Making Guideline* (Department of Planning and Environment, August 2023).
5. Consultation is required with the following public authorities and government agencies under section 3.34(2)(d) of the Act and/or to comply with the requirements of applicable directions of the Minister under section 9 of the Act:
- NSW Rural Fire Service (RFS);
 - Sydney Water;
 - Ausgrid;
 - Jemena; and
 - Transport for NSW

Each public authority is to be provided with a copy of the planning proposal and any relevant supporting material via the NSW Planning Portal and given at least 30 working days to comment on the proposal.

6. A public hearing is not required to be held into the matter by any person or body under section 3.34(2)(e) of the Act. This does not discharge Council from any obligation it may otherwise have to conduct a public hearing (for example, in response to a submission or if reclassifying land).

Dated 23 April 2024



Brendan Metcalfe
Director, State Rezoning
Planning Land Use Strategy, Housing and Infrastructure
Department of Planning, Housing and Infrastructure

Delegate of the Minister for Planning and Public Spaces

PP-2023-1109 (IRF24/804)

Appendix 5 Rural Fire Service Radiant Heat Calculations



SHORT FIRE RUN CALCULATOR (FOREST, WOODLAND, RAINFOREST & OTHER FOREST FORMATIONS)

[VIEW FACTOR CALCULATOR and RADIANT HEAT MODEL](#)

Forest & Woodland (release 1.1 - May 2017)

Property Address LGA
 Assessed By Date

Site Specific Inputs

Effective Slope Degrees FDI
 Site Slope Degrees Flame Temperature Kelvin
 Elevation of Receiver Metres Average fuel height Metres
 Vegetation Type
 Surface & Elevated Fuel Load tph Distance from vegetation Metres
 Overall Fuel Load tph

SFR - fire run length

Measured Short Fire Run Metres

SFR Elevated fuel load

Elevated Fuel Load
 Elevated Fuel Height (2 metres max.) Metres

Calculate site input



CALCULATED OUTPUTS

Site specific outputs - Fully Developed Fire (FDF)

Vegetation	Sydney Coastal DSF - 21.3 & 27.3								
Effective Slope	12	Degrees	Flame Temperature	1200	Kelvir	Wind Speed	45	kph	
Site Slope	2	Degrees	Fuel Load	21.30	tph	FDF Intensity	82514	kW/m	
FDF Flame Angle	65	Degrees	Overall Fuels	27.30	tph	FFDI	100		
FDF Flame Length	41.30	Metres	Vegetation Height	1.4	Metres	FDF FROS	5.85	Metres	
Elevation of Receiver	17	Metres	Distance to Vegetation	61.8	Metres				
							FDF Radiant Heat	22.45	kW/m ²

Site specific outputs - Short Fire Run (SFR)

Vegetation	Sydney Coastal DSF - 21.3 & 27.3				Wind Speed	30	kph		
Elevated Fuel Height	2.0	Metres	Flame Temperature	1200	Kelvir	SFR Intensity	64379	kW/m	
Effective Slope	12	Degrees	Fuel Load	21.30	tph	FFDI	100		
Site Slope	2	Degrees	Overall Fuels	27.30	tph	SFR FROS	5.85	Metres	
SFR Flame Angle	62	Degrees				SFR Head Width	36.60	Metres	
SFR Flame Height	36.74	Metres				SFR Fire Run Length	100	Metres	
Elevation of Receiver	17.00	Metres				Distance from Vegetation	61.8	Metres	
							SFR Radiant Heat	9.92	kW/m ²

SFR NOTE:

This model is not to be copied without the express permission of the Manager of Development Planning and Policy.

Only the WINDSPEED and DISTANCE travelled will influence a change in the head width i.e. Fire shape.
This model does not take into account ignition time or moisture content for surface fuels.

Other inputs such as slope, FFDI and fuel loads will influence the ROS and intensity.
This model is NOT to be provided to users outside RFS.

Disclaimer:

The NSW RFS Short Fire Run Risk Assessor (SFRA) spreadsheet is provided as-is. Whilst every care has been undertaken in developing this spreadsheet no assurances are given that it is free from error or omission. Use of the software is at the user's risk and discretion. NSW RFS and the Author make no expressed or implied warranty or representation of the merchantable quality or fitness for purpose of the spreadsheet and disclaim all liability for the consequences of anything done by any person in reliance upon the calculations within the spreadsheet.

Assessor Comment





Section 6.4 Development of existing SFPP facilities of *Planning for Bush Fire Protection 2019* is not a consideration for a rezoning.

A Bushfire Strategic Planning Study addressing Section 4 and Section 6 of *Planning for Bush Fire Protection 2019* must be provided to support this proposal.

For any queries regarding this correspondence, please contact Joshua Calandra on 1300 NSW RFS.

Yours sincerely,

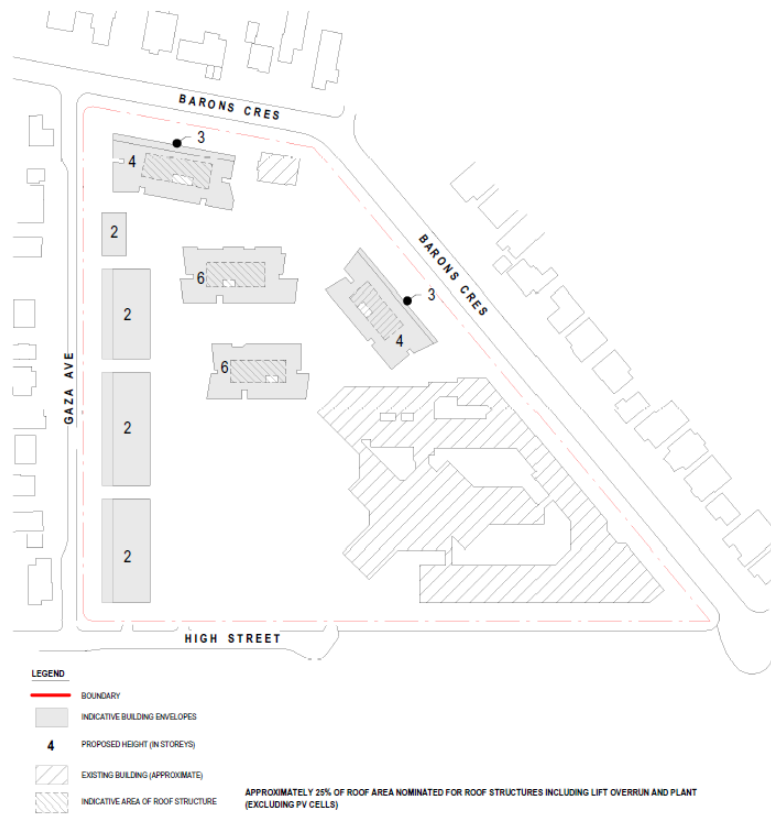
Adam Small
**Supervisor Development Assessment & Plan
Built & Natural Environment**



Appendix 6 Indicative Radiant Heat Calculations

		NBC Bushfire Attack Assessment Report V4.1 AS3959 (2018) Appendix B - Detailed Method 2 Print Date: 16/09/2025 Assessment Date: 24/03/2025	
Site Street Address:		Montefiore Residential APZ NE, Hunters Hill	
Assessor:		Lew Short; Blackash	
Local Government Area:		Hunter's Hill	Alpine Area: No
Equations Used			
Transmissivity: Fuss and Hammins, 2002 Flame Length: RFS PBP, 2001/Vesta/Catchpole Rate of Fire Spread: Noble et al., 1980 Radiant Heat: Drysdale, 1985; Sullivan et al., 2003; Tan et al., 2005 Peak Elevation of Receiver: Tan et al., 2005 Peak Flame Angle: Tan et al., 2005			
Run Description:		Residential APZ Northeast	
Vegetation Information			
Vegetation Type:		Sydney Coastal DSF	
Vegetation Group:		Dry Sclerophyll Forests (Shrubby)	
Vegetation Slope:		12 Degrees	Vegetation Slope Type: Downslope
Surface Fuel Load(t/ha):		21.3	Overall Fuel Load(t/ha): 27.3
Vegetation Height(m):		17	Only Applicable to Shrub/Scrub and Vesta
Site Information			
Site Slope:		0 Degrees	Site Slope Type: Level
Elevation of Receiver(m):		17	APZ/ Separation(m): 33
Fire Inputs			
Veg./Flame Width(m):		30	Flame Temp(K): 1090
Calculation Parameters			
Flame Emissivity:		95	Relative Humidity(%): 25
Heat of Combustion(kJ/kg)		18600	Ambient Temp(K): 308
Moisture Factor:		5	FDI: 100
Program Outputs			
Level of Construction:		BAL FZ	
Radiant Heat(kW/m2):		28.28	
Flame Length(m):		41.3	
Rate Of Spread (km/h):		5.85	
Transmissivity:		0.838	
Fire Intensity(kW/m):		82514	
		Peak Elevation of Receiver(m): 12.43	
		Flame Angle (degrees): 42	
		Maximum View Factor: 0.444	
		Inner Protection Area(m): 33	
		Outer Protection Area(m): 0	

Appendix 7 Building Height



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File Path: 2020107_20200320_20200320

Project No.
2020107

Project
MONTEIREAU HUNTERS HILL

Drawing
PROPOSED HEIGHT OF BUILDINGS

Drawing Number
SK-207

Revision

Date

JACKSON TEECE