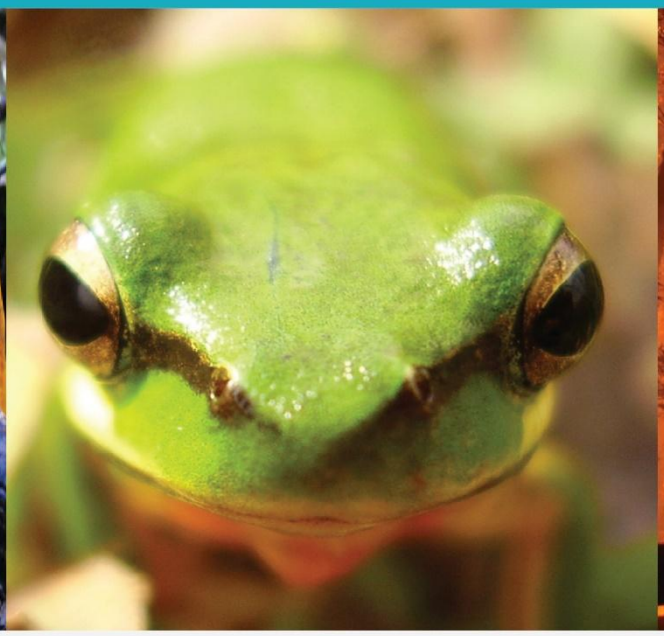
TRAVERS BUSHFIRE & ECOLOGY

A TBE ENVIRONMENTAL COMPANY


# PART 5 ASSESSMENT: BUSHFIRE PROTECTION ASSESSMENT

Proposed Affordable Housing Apartments

Lot 1 DP 1168657, Lot 10 DP 1011323, and Lot 50 DP 1301215

9A, 69 and 82 Myall Road, Garden Suburb

4 November 2025

(REF: LAND21BPA)

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Affordable Housing Apartments

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9A, 69 and 82 Myall Road, Garden Suburb

| | |
|---|---|
| Preliminary Report: | Jess Bowditch - Bushfire Consultant |
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| Final by: | Dr. Grahame Douglas - Principal Bushfire Consultant |
| Date: | 4/11/25 |
| File: | LAND21BPA |
| Version: | 1.0 FINAL |

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# EXECUTIVE SUMMARY

This Bushfire Protection Assessment (BPA) has been prepared to support a Review of Environmental Factors (REF) for the proposed affordable housing apartment development at Lot 50 DP 1011323 (proposed Lots 67 and 68), located at 9A Myall Road, Garden Suburb, NSW 2289. The REF is being undertaken in accordance with the Section 5.5 of the *Environmental Planning & Assessment Act 1979 (EP&A Act*), under the Part 5 pathway for an activity.

As part of the NSW Government's commitment to increasing the supply of affordable housing, Landcom has a commitment to deliver affordable housing on all projects – 10% in metro locations and 20% in regional locations. As part of this commitment, Landcom intend to deliver 69 affordable housing dwellings across two lots within the Landcom Garden Suburb Project site. Landcom is seeking to deliver the proposal as 'development without consent' through the *State Environmental Planning Policy (Housing) 2021* (Housing SEPP) by way of a Review of Environmental Factors (REF) under Part 5 of the *EP&A Act*.

While the site is mapped as bushfire prone land, the proposal is not classified as *integrated development* and therefore does not require a *Bush Fire Safety Authority (BFSA)* under Section 100B of the *Rural Fires Act 1997 (RF Act)*. However, in accordance with the requirements of *Planning for Bush Fire Protection 2019 (PBP)*, bushfire risk must still be assessed as part of the REF process. This BPA has been prepared to inform the REF and to assist the determining authority in satisfying its statutory obligations under Part 5 of the *EP&A Act*.

The broader Garden Suburb Project received development consent (DA/1284/2013) from the Hunter and Central Coast Regional Planning Panel on 20 December 2020. The approved subdivision includes 66 residential allotments, three super lots (including Lots 67 and 68), three conservation lots, and associated civil and landscape works. Earth works and bulk works on the subdivision are currently underway. A rezoning application for the proposed identical subdivision has been prepared by *TBE* in September 2025, with architectural designs to be finalised and submitted to the NSW RFS for consideration.

The proposed affordable housing development will comprise a mix of terrace housing and residential flat buildings, along with supporting infrastructure and landscaping. Bushfire hazard to the site is primarily associated with forest vegetation to the west and south. The western and southern boundary, in particular, presents the highest bushfire threat due to vegetation extent, fire history, and prevailing environmental conditions. This BPA identifies appropriate bushfire protection measures to mitigate risks and ensure compliance with *PBP*.

*Travers bushfire & ecology (TBE)* makes the following recommendations:

**Recommendation 1 –** The development including APZs is as generally indicated on the attached Schedule 1 - Plan of Bushfire Protection Measures and in Table 2-1 of this report. Future dwellings on Lot 68 must be constructed to achieve BAL-29 compliance (*AS 3959:2018*). Future dwellings on Lot 67 are to be BAL 12.5. A temporary APZ of a minimum of 12m may be required along the south of Lots 67 and 68, until the proposed residential subdivision is constructed and underway.

**Recommendation 2 –** Lots 67 and 68 are within 100m of bushfire prone vegetation and therefore require construction standards as per AS3959:2018. This includes verandas, facades and any balconies constructed from non-combustible material, ember protection such as aluminium screening and vent protection.

**Recommendation 3 –** Proposed landscaping designs by Inview Designs complies with *Appendix 4* of *PBP*. Planting of shrubs must be limited to ensure there is no continuous fuel ladder from the ground to the canopy of proposed planted trees. Avoid dense oil and fibrous species such as Eucalyptus spp., Leptospermum, Melaleuca, Conifers, Cypress pines, and Lantana. Avoid mulch or leaf litter in understory.

**Recommendation 4 –** Conduct a detailed review of hydrant placement to confirm compliance with AS 2419.1:2021.

**Recommendation 5 –** Preparation of a ground's maintenance plan and inclusion of ongoing bushfire management maintenance.

**Recommendation 6 –** Electrical reticulation and reticulated water are proposed and must be in accordance with *PBP* provisions. Implement a restriction on title to prevent the use of gas connections to dwellings. Small, bottled gas is permissible for BBQs.

**Recommendation 7** – Prior to occupation, preparation of a Bushfire Emergency and Evacuation Plan (BEEP) for each building to ensure emergency planning compliance by the buildings management committee.

# GLOSSARY OF TERMS

| | |
|---|---|
| AHIMS | Aboriginal Heritage Information System |
| APZ | Asset protection zone |
| *AS1596* | *Australian Standard – The storage and handling of LP Gas* |
| *AS2419* | *Australian Standard – Fire hydrant installations* |
| *AS3745* | *Australian Standard – Planning for emergencies in facilities* |
| *AS3959* | *Australian Standard – Construction of buildings in bushfire-prone areas 2018* |
| *BAL* | *Bushfire attack level* |
| BFSA | Bush Fire Safety Authority |
| DA | Development application |
| DCP | Development Control Plan |
| *EP&A Act* | *Environmental Planning & Assessment Act 1979* |
| *EP&A Regulation* | *Environmental Planning & Assessment Regulation 2000* |
| FDI | Fire Danger Index |
| IPA | Inner protection area |
| LEP | Local Environmental Plan |
| LGA | Local government area |
| m | metres |
| NCC | *National Construction Code* |
| *PBP* | *Planning for Bush Fire Protection 2019* |
| *RF Act* | *Rural Fires Act 1997* |
| *RF Regulation* | *Rural Fires Regulation 2022* |
| RFS | NSW Rural Fire Service |
| SFPP | special fire protection purpose |
| *TBE* | *Travers bushfire & ecology* |

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# 1. INTRODUCTION

*Travers bushfire & ecology (TBE)* has been engaged by *Landcom* to undertake a Bushfire Protection Assessment (BPA) for a Part 5 Assessment for the proposed Affordable Housing apartments at Lot 1 DP 1168657, Lot 10 DP 1011323, and Lot 50 DP 1301215 located at Myall Road, Garden Suburb. Lot 50 will become proposed Lots 67 and 68. The Part 5 Assessment calls for a Review of Environmental Factors (REF) to be undertaken, and as part of the REF, a bushfire protection assessment (BPA) has been prepared. The subject land, proposed Lots 67 and 68, is situated on Bush Fire Prone Land mapped by the Lake Macquarie City Council (refer Figure 1-1).

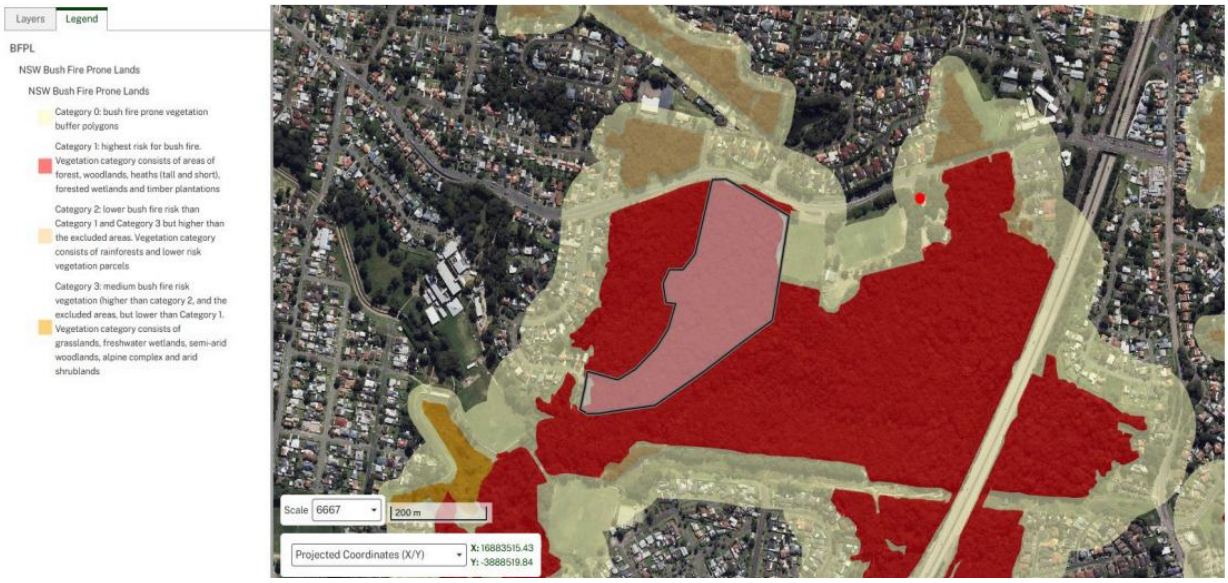



**Figure 1-1 – Bush fire prone land map**
*(Source: NSW Planning Portal accessed on 11/06/2025)*

An inspection of the proposed development site and surrounds was undertaken by Jess Bowditch on 17 June 2025 to assess the topography, slopes, aspect, drainage, vegetation and adjoining land use. The inspection included examining vegetation to the surrounding lands, for example to the south where another Landcom proposed project is being undertaken, for a residential subdivision.

## 1.1 Aims of the assessment

The aim of this BPA is to support the Part 5 Assessment, the overarching REF. The aims of the bushfire protection assessment are to:

- Review the bushfire threat to the development;
- Undertake a bushfire attack assessment in accordance with *PBP*;
- Propose a suitable package of bushfire protection measures commensurate with the level of risk to the development; and
- Assess the degree to which the proposed package of bushfire protection measures meets the aim and objectives of *PBP* and any relevant performance criteria.

This bushfire protection assessment is suitable for use as part of a development application (DA) or Part 5 assessment however, it is not intended for use as part of a planning proposal and does not serve as a bushfire management plan.

## 1.2 Site description

Landcom's Garden Suburb Project has been subject to a Development Application (DA/1284/2013) which was approved by the Hunter and Central Coast Regional Planning Panel on 20 December 2020, subject to deferred commencement conditions. The DA comprises the subdivision of lands and allows for development on the site for 66 residential allotments, 3 super lots & 3 conservation lots plus roads, landscaping, on-site detention and remediation works. Physical works have commenced on the subdivision. Lot 67 and 68 are two of the identified super lots and have been allocated for affordable housing and form part of the Garden Suburb Affordable Housing Project.

The overall site has recently been considered as part of a planning proposal to change the zoning of the site as well as building height and lot size under the Lake Macquarie LEP 2014. This change was undertaken to standardise the development controls for the site and remove the impediments to the site from the outdated Lake Macquarie LEP 1984 that was applicable to most of the land. This REF, development plans and specialist reporting has been undertaken concurrently with the rezoning to expedite the delivery of affordable housing at the site.

To meet Landcom's commitment under the Housing Accord, Landcom is seeking to develop Lot 67 and Lot 68 for the purpose of affordable housing. The proposal includes a mix of terrace housing and residential flat buildings as well as associated servicing and landscaping. This will deliver 69 affordable housing dwellings comprising the following with 8 dwellings design to be adaptable:

***Lot 67: 36 Dwellings***

- 1B = 18 Apt.
- 2B = 9 Apt + 5 Terraces
- 3B = 3 Apt + 1 Terrace

***Lot 68: 33 Dwellings***

- 1B = 15 Apt.
- 2B = 12 Terraces
- 3B = 6 Apt

The proposal will comprise of four built forms including two residential flat buildings and two townhouse developments, with each lot containing one residential flat building and one row of townhouses. The residential flat buildings have been positioned to address Myall Road and will be three storeys in height. The townhouses will address Premier Street and are to be two storeys in height.

Vehicular access to the site will be via Premier Circuit to the south. Each lot will be serviced by a vehicular driveway and onsite parking via basement parking beneath the residential flat buildings. To support the dwellings, a total of 19 parking spaces at Lot 67 and 18 parking spaces at Lot 68 are being provided. Accessible parking has also been included as part of the proposal.

Pedestrian access to the site will be via Trophy Avenue and Premier Circuit. Internal pedestrian paths are located within each lot, connecting the dwellings to communal open space, car parking, waste facilities and the external pedestrian network.

Landcom will deliver the affordable housing, and it is understood it will be managed in the future by a Community Housing Provider (CHP). It is anticipated that the affordable housing project will be delivered in 2028.

The proposed development site is in the Lake Macquarie Local Government Area within the Garden Suburb masterplan.


**Figure 1-2 – Aerial appraisal**

*(Source: Nearmap, Myall Road, Garden Suburb, assessed 11/06/2025)*


**Figure 1-3 – Development footprint**

*(Source: Landcom, Development Footprint, obtained 15/05/2025)*


**Figure 1-4 – Neighbouring existing development – east of the subject site**

*(Source: TBE site inspection, taken by Jess Bowditch, dated 17/06/2025)*


**Figure 1-5 – Myall Road – north -east of the subject land**

*(Source: TBE site inspection, taken by Jess Bowditch, dated 17/06/2025)*


**Figure 1-6 – Development footprint – earthworks**

*(Source: TBE site inspection, taken by Jess Bowditch, dated 17/06/2025)*


**Figure 1-7 – Development footprint – surrounding vegetation**

*(Source: TBE site inspection, taken by Jess Bowditch, dated 17/06/2025)*

## 1.3 Proposed land uses

### *1.3.1 Project description*

As part of the NSW Government's commitment to increasing the supply of affordable housing, Landcom has a commitment to deliver affordable housing on all projects – 10% in metro locations and 20% in regional locations. As part of this commitment, Landcom intend to deliver 69 affordable housing dwellings across two lots within the Landcom Garden Suburb Project site. Landcom is seeking to deliver the proposal as 'development without consent' through the *State Environmental Planning Policy (Housing) 2021* (Housing SEPP) by way of a Review of Environmental Factors (REF) under Part 5 of the *Environmental Planning and Assessment Act 1979 (EP&A Act)*.

The site of the whole subdivision is located in Garden Suburb, within the Lake Macquarie LGA. The property details are:

9A, 69 and 82 Myall Road, Garden Suburb, legally described as:

- Lot 1 DP 1168657,
- Lot 10 DP 1011323, and
- Lot 50 DP 1301215.

The site is irregular in shape and comprises a total area of approximately 38.88ha. Myall Road intersects the overall site within its northwestern portion. To reflect this, the site has been divided into two precincts, the northern precinct and the southern precinct. The northern precinct comprises Lot 1 DP 1168657 and is the land situated to the north of Myall Road. The southern precinct comprises Lot 10 DP 1011323 and Lot 50 DP 1301215 and is the land situated to the south of Myall Road.

The proposed affordable housing project is located within the southern precinct within Lot 50 DP 1301215.

The southern precinct comprises a mix of vegetated land and land that has been cleared to facilitate the approved residential subdivision under DA/1284/2013. The precinct has an approximate size of 37.15ha. The site is bound by Myall Road to the north, existing residential properties to the south and west and a sports field, hostel/aged care, some undeveloped vegetated land and the Newcastle Inner City Bypass to the east. A watercourse traverses the southern boundary of the site from east to west. The watercourse forms one of the tributaries of Winding Creek. This area of the site slopes upward from the south-western corner, toward Myall Road.

An aerial image illustrating the overall site and its features is included in Figure 1. The aerial image shows the recent site clearing in association with the approved residential subdivision.

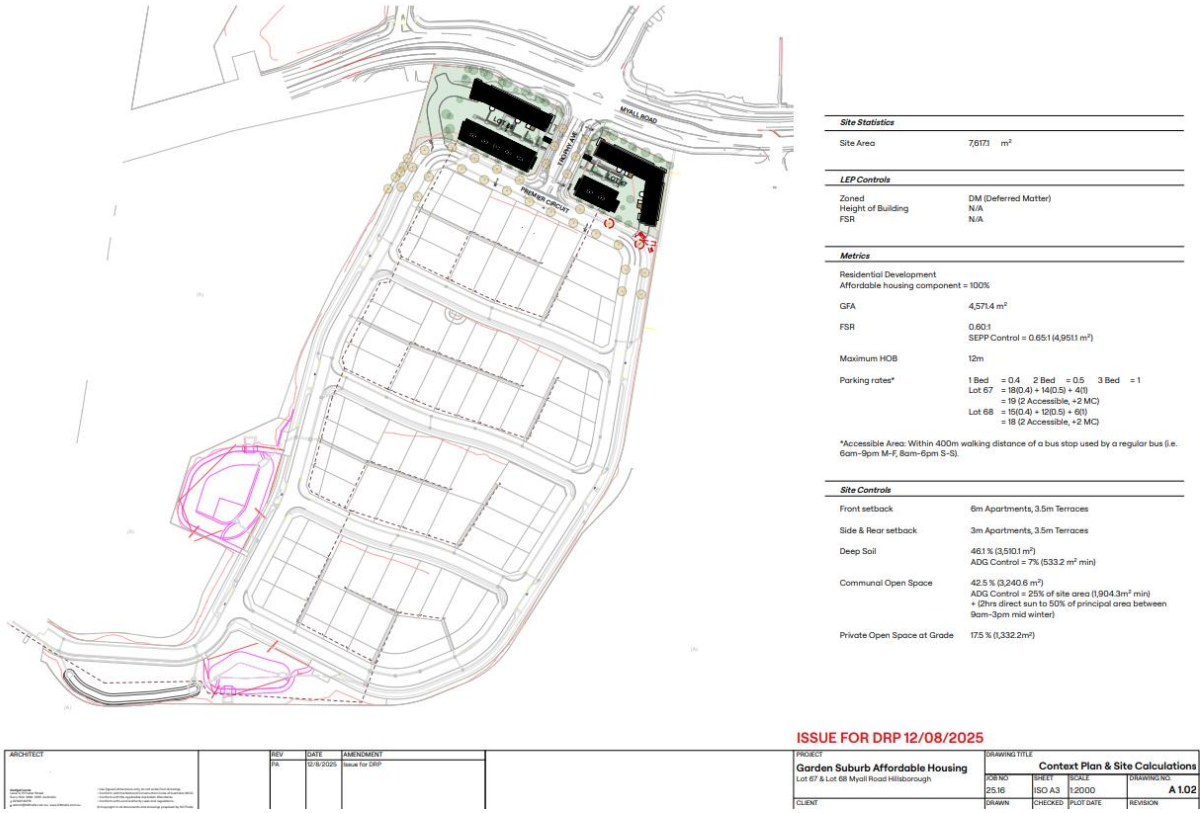



**Figure 1-8 – Site plans**

*(Source: Hills Thalis, Context Plan & Site Calculations, Rev PA, 12/08/2025)*


**Figure 1-9 – Site plans**

*(Source: Hills Thalis, Terraces L1 & Apartment Ground Rev PA, 12/08/2025)*

### 1.3.2 Lake Macquarie City Development Control Plan – 2014 (LMC DCP)

The bushfire protection objectives of the *LMC DCP (Part 3 Residential Zones Section 2.11)* are to:

a) *To ensure that risks associated with bushfire are appropriately and effectively managed on the development site.*
b) *To ensure that bushfire risk is managed in connection with the preservation of the ecological values of the site and adjoining lands.*

The controls of the LMC DCP are to:

1) *Development must comply with the NSW Planning for Bush Fire Protection Guidelines*
2) *Asset Protection Zones must:*
   i. *Be incorporated into the design of the development;*
   ii. *Be as low maintenance as possible;*
   iii. *Be located outside areas of ecological value and the buffers necessary to protect them; and*
   iv. *Not occur on adjoining environmental zoned land.*
3) *Bushfire prone areas and Asset Protection Zones must be identified on the Site Analysis Plan. Refer to Council's Bushfire Prone Land Map.*
4) *Clearing for the purposes of Asset Protection Zones should be avoided on ridgelines and slopes of 1:5 or greater.*
5) *Clearing of vegetation must be limited to that necessary to meet the NSW Planning for Bush Fire Protection Guidelines.*
6) *Clearing of native vegetation or trees for the purposes of reducing bushfire risk must be consistent with the current Bushfire Risk Management Plan prepared under the Rural Fires Act 1997.Note: Development Consent is not required for clearing for the purpose of bushfire hazard reduction if the clearing is consistent with the current Bushfire Risk Management Plan, and is undertaken in accordance with a current hazard reduction certificate issued by the Rural Fire Service or other certifying authority.*

The below tables illustrate the relevant residential building setback requirements from the LMC DCP 2014. Dwelling houses must have a minimum front setback of 4.5 m on ground floors (5.5 m for first floors) and 2.5 m to secondary street frontages. On classified roads, both front and secondary setbacks must be 7.0 m. Side setbacks must be at least 0.9 m for single-storey and 1.2 m for second-storey components, while rear setbacks must be 4.0 m for single-storey and 7.0 m for two-storey elements. Where living room doors open to side or rear open space, a 4.0 m setback is also required to maintain privacy and usability.

***Table 1-1 – LMC DCP 2014 – front and secondary building setbacks***

| Street | Front and Secondary Setbacks | |
|---|---|---|
| Classified Roads | Front = 7.0m | Secondary = 7.0m |
| Other Streets (ground floor) | Front = 4.5m | Secondary = 2.5m |
| Other Streets (first floor) | Front = 5.5m | Secondary = 2.5m |

***Table 1-2 – LMC DCP 2014 – side and rear building setbacks***

| Item | Side and Rear Setbacks | |
|---|---|---|
| Single storey dwelling houses | Side = 0.9m | Rear = 4.0m |
| Secondary storey component of dwelling houses | Side = 1.2m | Rear = 7.0m |
| Living room doors | Side = 4.0m | Rear = 4.0m |

# 1.4 Legislation and planning instruments

*Table 1-3 – Legislative and planning instruments summary*

| | |
|---|---|
| Is the site mapped as bushfire prone? | Yes. (Refer to Figure 1-1). |
| Proposed development type | Affordable Housing – Residential apartments |
| Is the development considered integrated for the purposes of Section 100B of the *Rural Fires Act 1997?* | No – an activity assessed under Part 5 of the *Environmental Planning and Assessment Act 1979* is not subject to the requirements of the Rural Fires (RF) Regulation 2022. |
| Is the proposal located in an Urban Release Area as defined under Clause 273 of the EP&A Regulations? | No |
| Zoning | Currently zoned under LEP 1984 as 2(a) Residential 'A', 2(b) Residential 'B', 3(c) Neighbourhood Business, 6(b) Open Space (Special Rec), 6(c) Open Space (local Reservation), 5(c) Special Uses (Local Road) and 1(a) Rural.<br>*TBE* were engaged in September 2025 by Barker Stewart on behalf of Landcom to prepare a rezoning application for the proposed residential subdivision, with the inclusion of the proposed Lots 67 and 68. One gazetted, the rezoning will only refer to the zoning under LMLEP 2014. |
| Does the proposal rely on a performance solution? | No |

## 1.4.1 *Environmental Planning and Assessment Act (1979)* and bushfire prone land

The *EP&A Act* governs environmental and land use planning and assessment within New South Wales. It provides for the establishment of environmental planning instruments, development controls, and the operation of construction controls through the *National Construction Code (NCC)*. The identification of bushfire-prone land is required under Section 10.3 of the *EP&A Act*.

Landcom is seeking to deliver the proposal as 'development without consent' through the *State Environmental Planning Policy (Housing) 2021* (Housing SEPP) by way of a Review of Environmental Factors (REF) under Part 5 of the *EP&A Act*.

## 1.4.2 *State Environmental Planning Policy (Housing) 2021*

The proposed development is being delivered by Landcom as 'development without consent' under Division 5 of Part 2 of the *State Environmental Planning Policy (Housing) 2021* (Housing SEPP), which permits certain types of affordable housing and associated infrastructure to proceed without development consent.

As such, the proposal is subject to environmental assessment under Part 5 of the *EP&A Act*, requiring the preparation of a *Review of Environmental Factors* (REF) by the determining authority.

In accordance with Clause 2.2.2 of the *Guide to the Review of Environmental Factors*, the REF must consider the potential impacts of the development on bushfire risk where the site is identified as bushfire prone land. This BPA has been prepared to inform the REF and ensure the proposal demonstrates compliance with the relevant performance criteria and acceptable solutions of *PBP*, as required under Section 4.15(1)(b) of the *EP&A Act*.

### 1.4.3 Planning for Bush Fire Protection 2019 (PBP)

*PBP* outlines the bushfire protection measures required to be assessed for new development in bushfire prone areas.

The aim of *PBP* is to provide for the protection of human life and minimise impacts on property from the threat of bush fire while having due regard to development potential, site characteristics, and protection of the environment.

The general objectives for any proposal are to:

- Afford buildings and their occupants protection from exposure to a bush fire.
- Provide for defendable 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 access for emergency services personnel and occupants is available.
- Provide for ongoing management and maintenance of Bushfire Protection Measures (BPMs); and
- Ensure that utility services are adequate to meet the needs of firefighters.

## 1.5 Environmental and Aboriginal heritage considerations

Submission requirements require the following environmental and heritage considerations that have the potential to be a constraint to implementing bushfire protection measures within the site and may require further assessments before construction proceeds within a site:

- identification of any significant environmental features on the property.
- the details of any threatened species, population or ecological community identified under the *Biodiversity Conservation Act 2016* that is known to the Applicant to exist on the property.
- the details and location of any Aboriginal object (within the meaning of the *National Parks and Wildlife Act 1974*) or Aboriginal place (within the meaning of that Act) that is known to the Applicant to be situated on the property.

The following sources databases were reviewed to determine whether any environmental and Aboriginal heritage constraints were present within the subject land:

*Table 1-4 – Environmental and heritage database*

| Potential constraint | Database |
|---|---|
| Aboriginal Heritage significant sites and places | Aboriginal Heritage Information Management System (AHIMS) |
| Watercourses | NSW Hydrography Dataset (NSW SEED portal) |

Searches of each database used a 50m buffered area from the subject land boundaries to identify features.

A basic search of the Aboriginal Heritage Information Management System (AHIMS) database conducted on 16 June 2025, identified no-known significant Aboriginal sites or places. There were also no watercourses identified.

# 2. BUSHFIRE THREAT ASSESSMENT

To assess the bushfire threat and to determine the required width of an APZ for development include the determination of the regional fire weather conditions (FFDI) and an assessment of the predominant vegetation that has the potential to be a bushfire threat to the development, as well as the effective slope within such vegetation. The known fire history for the subject land and surrounding landscape is also considered.

## 2.1 Fire history

A fire history search of the development site and its surrounding areas was conducted using the NSW National Parks and Wildlife Services (NPWS) 'NPWS Fire History- Wildfires and Prescribed Burns' database within the NSW SEED Portal.

In total, there has been only a few fires recorded within a 15km radius of the site between the period of 1997-2025. The closest wildfire occurred in 1996-97 (Figure 2-1). The subject site is on the east coast and located close to Lake Macquarie.


**Figure 2-1 – Fire history**

*(Source: NSW SEED Portal, Fire History, assessed 11/06/2025)*

## 2.2 Predominant vegetation

*PBP* guidelines require the identification of the predominant vegetation formation in accordance with David Keith (2004) when using the simplified acceptable solutions in *PBP*. The vegetation is calculated for a distance of at least 140m from a proposed building envelope, although vegetation also needs to be considered at the macro scale. The identified vegetation within 140m of the site was identified from the Geocortex viewer within the NSW SEED Portal

which includes layers relating to NSW BioNet PCT sites and NSW State Vegetation Mapping. The vegetation formations were then assessed considering *Appendix 1* of *PBP* and at a site visit.

The predominant vegetation within the 140m assessable area is listed in Table 2-1.

***Table 2-1 – Vegetation***

| Vegetation community | Vegetation classification | Vegetation formation | PBP Classification |
|---|---|---|---|
| Hunter Coast Foothills Apple Forest (PCT 3581) | Sydney Coastal Dry Sclerophyll Forests | Dry Sclerophyll Forests (Shrubby sub-formation) | Forest |
| Hunter Coast Lowland Apple Bloodwood Forest (PCT 3582) | Sydney Coastal Dry Sclerophyll Forests | Dry Sclerophyll Forests (Shrubby sub-formation) | Forest |
| Sydney Coastal Sandstone Riparian Forest (PCT 3596) | Sydney Coastal Dry Sclerophyll Forests | Dry Sclerophyll Forests (Shrubby sub-formation) | Forest |
| Hunter Coast Foothills Apple Ironbark Grassy Forest (PCT 3432) | Hunter- Macleay Dry Sclerophyll Forests | Dry Sclerophyll Forests (Shrubby sub-formation) | Forest |

The existing vegetation within the proposed development footprint during the site inspection was being cleared with bulk earthworks. The surrounding vegetation to the south, south-east and west is predominately forest vegetation with a shrubby understory. Further west and south-west are an existing residential subdivision (future connection via Gillian Crescent). The adjoining land to the east of the site is a soccer field and is considered 'managed lands. To the north of the site, is Myall Road, an empty lot (Lot 69) and existing residential dwellings.

## 2.3 Effective slope

The effective slope has been assessed for up to 100m from the development site. Effective slope refers to the slope which provides the most effect upon likely fire behaviour. A mean average slope may not in all cases provide sufficient information such that an appropriate assessment can be determined.

In general, the subject land has a downslope topography in a north to south direction. Lots 67 and 68 (proposed apartment buildings) are considered level, with a steep downslope from the south of the lots (>0-5 degrees) and further into the proposed residential subdivision represents >10-15 degrees. As a result, the forest vegetation to the south of the site is downslope with respect to the development. (Refer to Schedule 1).

## 2.4 Regional fire weather conditions

The study area assessment methodology relies on the application of the relevant fire weather conditions, referred to as the Fire Danger Index (FFDI) or the Grassland Fire Danger Index (GFDI) for grassland vegetation. The acceptable solutions for southwestern Sydney are associated with the Greater Hunter Fire Weather District and are given as an FDI and GFDI of 100 and 130 respectively. For these given values, Table *A1.12.2* of *PBP* is used for the Greater Hunter Region District in determining the relevant APZs.

## 2.5 Bushfire attack assessment

Table 2-2 provides a summary of the bushfire attack assessment based on potential bushfire threats within the subject land's boundaries and surrounding landscape. Both bushfire attack assessments are based on a residential development and the methodologies used to determine APZs within *PBP*.

The APZs are required to be wholly within the site's boundaries and should not rely on being on adjoining land (including residual lots). APZs can extend beyond a site's boundaries in cases where structures or features of a landscape are considered permanent and act as barriers against fire spread.

Examples are road carriageways, urban landscapes or land with vegetation that is considered managed. The minimum APZ setback required for residential and rural subdivisions is a rating of BAL-29, which ensures buildings are not exposed to a radiant heat flux exceeding 29kW/$m^2$. This is currently based on the roadside vegetation presenting as a tall heath (rather than a forest).

It should be noted that this assessment makes no assumption that development in the form of schools, hospitals or medical centres, seniors living or other retirement accommodation, or group homes will be developed. These developments are considered special fire protection purposes and require a significantly greater setback to achieve a maximum radiant heat flux of no more than 10kW/$m^2$.

As such, the inclusion of such developments is NOT recommended for this site.

*Table 2-2 – Bushfire attack assessment summary – Lots 68 and 67 (apartment buildings)*

| Aspect | Vegetation Formation | Effective Slope | Minimum APZ Required (BAL 29) | APZ provided | Comment |
|---|---|---|---|---|---|
| North | Managed land (Myall Road and existing residential development) | N/A | | | The adjoining land to the north of the development is Myall Road and housing. |
| East | Managed Lands (Lance York Oval) | N/A | N/A | N/A | To the east is Lance York Oval. This area is considered 'managed lands. The proposed internal roads running from north to south along the eastern border also assists in creating adequate defendable space. |
| South | Grasslands<br>Managed land (Proposed residential subdivision) | >0-5° | 12m | 16m | To the south is the remaining proposed residential subdivision development, which includes perimeter and internal roads.<br>For the proposes of the assessment, as the residential subdivision is not yet built, a minimum APZ of 12m is required from the proposed buildings, until the residential subdivision is built and area can be classed as 'Managed lands. |
| West | Forest | >0-5° | 29m | 29m | To the west is forest vegetation. The perimeter road running along the western border assists with the provision of the APZ. |

In summary, the main bushfire threat to the development is from the forest vegetation to the south, south-west and west. There is also a low threat of bushfires from the north and east of the direction of the proposed apartment buildings because of the adjoining land being the urban landscape (i.e. managed land).

Overall, the proposed future residential apartments for the proposed Lots 67 and 68 will achieve suitable APZs based on the current site plan. The specified lots need to achieve the minimum APZ setbacks required by *PBP* (29m minimum) which ensures any future residential building is not exposed to a radiant heat flux exceeding 29kW/m$^2$. For the proposes of the

assessment, as the residential subdivision is not yet built, a minimum APZ of 12m is required from the proposed buildings, until the residential subdivision is built and area can be classed as ‘Managed lands. There are no implications to the current design. No buildings are to be built in this area. This area is all cleared and is classed as grasslands. (Refer to Schedule 1). The design incorporates a proposed access driveway from Premier Circuit. The broader design will incorporate an 8m perimeter road from the north, connecting onto Gillian Crescent for the proposed residential subdivision.

# 3. BUSHFIRE PROTECTION MEASURES

The bushfire protection measures (BPMs) for residential developments include measures relating to APZs, access to structures and water supply, perimeter road and firefighting access, and provision of water. Electricity and gas services should be provided so that they don't add to the bush fire risk to buildings.

All requirements for BPMs that relate to the development must be provided, unless where specific circumstances apply to render a BPM irrelevant (i.e. no landscaping required).

## 3.1 Asset Protection Zones (APZs)

A The intent of BPMs relating to APZs is to provide sufficient space and maintain reduced fuel loads to ensure radiant heat levels at the buildings are below critical limits and prevent direct flame contact. Furthermore, the affordable housing apartments must be managed as an inner protection area (IPA) by the landowner in accordance with Appendix 4 of *PBP* and as outlined in Schedule 2. This requirement is to be in perpetuity or until all bushfire threats to the development are removed.

Table 3-1 outlines the proposal's compliance with the acceptable solutions for APZs.

***Table 3-1 – Standards for asset protection zones and landscaping (PBP)***

| ***Performance criteria: potential building footprints must not be exposed to radiant heat levels exceeding 29 kW/m² on each proposed lot, APZs are managed and maintained to prevent the spread of a fire towards the building, the APZs is provided in perpetuity, APZ maintenance is practical, soil stability is not compromised and the potential for crown fires is minimised and landscaping is designed and managed to minimise flame contact and radiant heat to buildings, and the potential for wind-driven embers to cause ignitions.*** | | |
|---|---|---|
| ***Acceptable Solution*** | ***Complies*** | ***Comments*** |
| APZs are provided in accordance with Tables A1.12.2 and A1.12.3 based on the FFDI. | ☑ | APZ setbacks include a minimum of 29-45m from forest vegetation and 12-16m for grasslands, compliant with *PBP*. |
| APZs are managed in accordance with the requirements of Appendix 4. | ☑ | Mitigation measure |
| APZs are wholly within the boundaries of the development site | ☑ | Proposed APZs are wholly within property boundaries, with setbacks validated for compliance. |
| APZs are located on lands with a slope less than 18 degrees. | ☑ | All APZs are situated on compliant gradients, ensuring operational safety and bushfire resistance. |
| Landscaping is in accordance with Appendix 4; and | ☑ | Landscape design has been prepared by Inview Designs in August 2025. The design includes a 15% canopy cover. The design incorporates retaining walls, non-combustible features, inorganic |

| ***Performance criteria: potential building footprints must not be exposed to radiant heat levels exceeding 29 kW/m² on each proposed lot, APZs are managed and maintained to prevent the spread of a fire towards the building, the APZs is provided in perpetuity, APZ maintenance is practical, soil stability is not compromised and the potential for crown fires is minimised and landscaping is designed and managed to minimise flame contact and radiant heat to buildings, and the potential for wind-driven embers to cause ignitions.*** | | |
|---|---|---|
| | | material, and a mix of native vegetation and shrubs. Paved footpaths, basketball area and other turfed areas are proposed (see Figures below). |
| Fencing is constructed in accordance with section 7.6. | ☑ | Future fencing specifications should include non-combustible materials as required by *PBP*. Landscape design includes retaining walls, mostly made of sandstone. |

**Summary:** The proposed asset protection zones meet the performance criteria outlined in *PBP*, ensuring the reduction of bushfire risk to below critical thresholds for future dwellings. All setbacks and APZ management strategies are in full compliance with acceptable solutions.

**Considerations:**

- **Planting of shrubs must ensure there is no continuous fuel ladder from the ground to the canopy of proposed planted trees**
- **Avoid dense oil and fibrous species such as Eucalyptus spp., Leptospermum, Melaleuca, Conifers, Cypress pines, and Lantana.**


**Figure 3-1 – Landscaping design**

*(Source: Inview Design, Landscaping Design Overall, Rev 1 dated 12 August 2025)*


**Figure 3-2 – Landscaping design – Proposed plant selections**

*(Source: Inview Design, Landscaping Design Overall, Rev 1 dated 12 August 2025)*

## PLANT LISTS

**Dominant Canopy Trees**

Angophora costata – Sydney Red Gum
Corymbia gummifera – Red Bloodwood
Eucalyptus piperita – Sydney Peppermint
Eucalyptus racemosa – Narrow-leaved Scribbly Gum
Syncarpia glomulifera – Turpentine

**Sub Canopy & Small Trees**

Acacia longifolia – Sydney Golden Wattle
Allocasuarina littoralis – Black She-Oak
Banksia serrata – Old Man Banksia
Banksia spinulosa – Hairpin Banksia
Melaleuca linariifolia – Snow in Summer

**Shrubs and understory planting**

Dampiera stricta – Blue Dampiera
Daviesia ulicifolia – Gorse Bitter-pea
Dodonaea triquetra – Large Leaf Hop Bush
Leptospermum polygalifolium – Tantoon
Lomandra longifolia – Spiny-headed Mat-rush
Persoonia linearis – Narrow leaf Geebung
Pimelea linifolia – Rice Flower
Pultenaea daphnoides – Large-leaf Bush-pea
Xanthorrhoea macronema – Grasstree

**Groundcovers and grasses**

Aristida vagans – The Threeawn Speargrass
Dianella caerulea – Blue Flax Lily
Dichondra repens – Kidney Weed
Entolasia marginata – Border Grass
Lepidosperma laterale – Variable Sword Sedge
Panicum simile – Two Colour Panicum
Poa affinis – Tussock Grass
Themeda triandra – Kangaroo Grass
Viola hederacea – Native Violet

in view

**Figure 3-3 – Landscaping design – proposed plant lists**

*(Source: Inview Design, Landscaping Design Overall, Rev 1 dated 12 August 2025)*

## 3.2 Construction standards

The building construction standards of future dwellings within the development site that will be situated on BFPL and within 100m of bushland or 50m of grassland are to be applied in accordance with *AS3959 Construction of buildings in bushfire prone areas (2018)* or NASH Standard and Section 5 of *PBP*. Future residential buildings will be able to comply with BAL 29 or lower setbacks.

The proposed Lots 67 and 68 and within 100m of bushland, meeting BAL-29. However, the proposed buildings will be subject to construction standards, such as aluminium screens and gap/vent protection for embers is required.

## 3.3 Access

The intent of the access measures is to provide safe operational access to structures and water supply for emergency services, while residents are seeking to evacuate from an area.

Proposed civil plans have been provided in Figure 3-4 and Figure 3-5.

***Table 3-2 – Standards for access (General) within residential subdivisions (PBP)***

| ***Performance criteria: Firefighting vehicles are provided with safe, all-weather access to structures*** | | |
|---|---|---|
| ***Acceptable Solution*** | ***Complies*** | ***Comments*** |
| Property access roads are two-wheel drive, all-weather roads; | ☑ | Proposed designs include sealed, all-weather roads accessible by firefighting vehicles. |
| Perimeter roads are provided for residential subdivisions of three or more allotments; | N/A | This is a proposed affordable housing apartment allotment, and not a subdivision as such, however perimeter roads and provide adequate firefighting access. There is a proposed residential subdivision which will connect to Premier Circuit and Trophy Avenue, providing perimeter roads. |
| Subdivisions of three or more allotments have more than one access in and out of the development; | N/A | See above. |
| Traffic management devices are constructed to not prohibit access by emergency services vehicles; | ☑ | Traffic management plan should include features that avoid obstructions for emergency vehicles. Mitigation measure. |
| Maximum grades for sealed roads do not exceed 15 degrees and an average grade of not more than 10 degrees or other gradient specified by road design standards, whichever is the lesser gradient; | ☑ | Road gradients comply with both maximum and average slope criteria, ensuring safe access for firefighting vehicles. |
| All roads are through roads; | ☑ | The proposed broader road design, connecting to the proposed residential subdivision, south of the affordable housing apartments comply with all through roads. here is a deviation for all through roads. |

| *Performance criteria: Firefighting vehicles are provided with safe, all-weather access to structures* | | |
|---|---|---|
| Dead end roads are **not recommended**, but if unavoidable, are not more than 200 metres in length, incorporate a minimum 12 metres outer radius turning circle, and are clearly sign posted as a dead end: | ☒ | There is a technical deviation to the corner of Lot 68, where a dead end is illustrated in design, along the proposed access driveway.<br>'No stopping' or 'no parking' signage placement at the end of this turning point is recommended. This is recommended to be placed at the end of the driveway. |
| Where kerb and guttering are provided on perimeter roads, roll top kerbing should be used to the hazard side of the road; | ☑ | Kerb designs incorporate roll top kerbing on hazard-facing sides of road to facilitate emergency vehicle access. |
| Where access/egress can only be achieved through forest, woodland and heath vegetation, secondary access shall be provided to an alternate point on the existing public road system | ☑ | Complies. Development site is a grassland, and no forests, woodlands or heaths are found on the site or adjoining development (buildable areas). |
| One-way-only public access roads are no less than 3.5 metres wide and have designated parking bays with hydrants located outside of these areas to ensure accessibility to reticulated water for fire suppression | ☑ | Complies. Road widths meet *PBP* standards, ensuring operational access for emergency vehicles. Reticulated water is proposed. |

**Summary:** The proposed access infrastructure demonstrates compliance with several key criteria; however, there are some deviations for residential subdivisions with perimeter roads and all through roads:

**There is a deviation for all through roads to the corner of Lot 68, where a dead end is illustrated in design.**
**'No stopping' or 'no parking' signage placement at the end of this turning point is recommended. This is recommended to be at the end of the driveway. The proposed road widths comply with performance criteria for firefighting vehicles by supplying appropriate turning circles.**

**Considerations:**

- Validate the traffic management plan and kerb design compliance prior to finalizing.

*Table 3-3 – Standards for perimeter roads within residential subdivisions (PBP)*

| ***Performance criteria: vehicle access roads are designed to allow safe access and egress for firefighting vehicles while residents are evacuating as well as providing a safe operational environment for emergency service personnel during firefighting and emergency management on the interfaces are provided with safe, all-weather access to structures.*** | | |
|---|---|---|
| ***Acceptable Solution*** | ***Complies*** | ***Comments*** |
| Are two-way sealed roads; | ☑ | Complies |
| Minimum 8m carriageway width kerb to kerb | ☑ | |
| Parking is provided outside of the carriageway width | N/A | No parking – no perimeter roads as such for proposed development. |
| Hydrants are located clear of parking areas; | ☑ | Mitigation measure. |
| Are through roads, and these are linked to the internal road system at an interval of no greater than 500m; | ☒ | Deviates – there is a 'no through' road to the west (Lot 68). However, the proposed road widths comply with acceptable solutions for firefighting vehicles by supplying appropriate turning circles. A 'No Stopping' or 'no parking' signs to be implemented. This is recommended to be at the end of the driveway. The travel distance is less than 100m. |
| Curves of roads have a minimum inner radius of 6m; | ☑ | All road curves comply with the minimum 6m inner radius requirement, facilitating safe manoeuvring of firefighting vehicles. |
| The maximum grade road is 15 degrees and average grade of not more than 10 degrees; | ☑ | Road designs maintain compliant gradients, ensuring safe access and egress for emergency vehicles under all conditions. Grades less than 10 degrees. |
| The road crossfall does not exceed 3 degrees; | ☑ | Crossfall measurements throughout the subdivision roads are within the permissible limit, enhancing vehicular stability and safety during emergencies. See typical road design. |
| A minimum vertical clearance of 4m to any overhanging obstructions, including tree branches, is provided. | ☑ | Vertical clearance meets the 4m requirement, ensuring unobstructed passage for firefighting equipment and larger vehicles. |

**Summary:** The proposed perimeter road design demonstrates general compliance with *PBP* performance criteria. However, there are some deviations:

**There is a 'no through' road to the west (Lot 68). However, the proposed road widths comply with performance criteria for firefighting vehicles by supplying appropriate turning circles. A 'No Stopping' sign to be implemented.**

**Considerations:**

- Ensure future vegetation management plan is consistent with *PBP* perimeter road requirements.
- A 'No Stopping' sign to be implemented at the end of the access driveway.

*Table 3-4 – Standards for non-perimeter roads within residential subdivisions (PBP)*

| ***Performance criteria: Firefighting vehicles are provided with safe, all-weather access to structures*** | | |
|---|---|---|
| ***Acceptable Solution*** | ***Complies*** | ***Comments*** |
| Minimum 5.5m carriageway width kerb to kerb | ☑ | All non-perimeter roads are 8m and meet the minimum carriageway width of 5.5m, ensuring accessibility for firefighting vehicles. |
| Parking is provided outside of the carriageway width; | ☑ | Parking is illustrated outside of the carriageway width along Trophy Avenue. |
| Hydrants are located clear of parking areas; | ☑ | Mitigation measure. Reticulated water to be provided. |
| Roads are through roads, and these are linked to the internal road system at an interval of no greater than 500m; | ☑ | The internal road network includes roads linked at compliant intervals, facilitating efficient movement for emergency vehicles. |
| Curves of roads have a minimum inner radius of 6m; | ☑ | Road curves meet the required 6m inner radius, allowing smooth navigation for firefighting equipment. |
| The road crossfall does not exceed 3 degrees; | ☑ | Road crossfall on internal road to the west of Lot 68 illustrates 3.3% road crossfall and a max 5% road cross fall in some areas. |
| A minimum vertical clearance of 4m to any overhanging obstructions, including tree branches, is provided. | ☑ | Mitigation measure. Adequate vertical clearance to be ensured, with no obstructions below 4m, facilitating the passage of firefighting vehicles and larger apparatus. |

**Summary:** The proposed non-perimeter roads largely comply with the performance criteria for providing safe, all-weather access to structures; however, there are some areas requiring additional clarification and potential improvement:

- The positioning of dedicated water supplies relative to parking areas needs further clarification at the detailed design stages, such as hydrants. Additional detail of the site is required to confirm compliance at the detailed design stage.

**Considerations:**

- Clearly identify and designate hydrants on-site at the detailed design stages to prevent any obstruction for firefighting purposes.

*Table 3-5 – Standards for property access within residential subdivisions (PBP)*

| ***Performance criteria: Firefighting vehicles can access the dwelling and exit the property safely*** | | |
|---|---|---|
| ***Acceptable Solution*** | ***Complies*** | ***Comments*** |
| There are no specific access requirements in an urban area where an unobstructed path (no greater than 70m) is provided between the most distant external part of the proposed dwelling and the nearest part of the public access road (where the road speed limit is not greater than 70kph) that supports the operational use of emergency firefighting vehicles. | ☑ | Complies.<br><br>The layout complies with urban access requirements, with no unobstructed paths exceeding 70m to the public road system. |
| **Summary:** The proposed property access design meets the performance criteria outlined in *PBP*, Table 5.3d. The design ensures unobstructed access paths for firefighting vehicles, adequate clearance and turning areas, and compliant road grades and widths. | | |

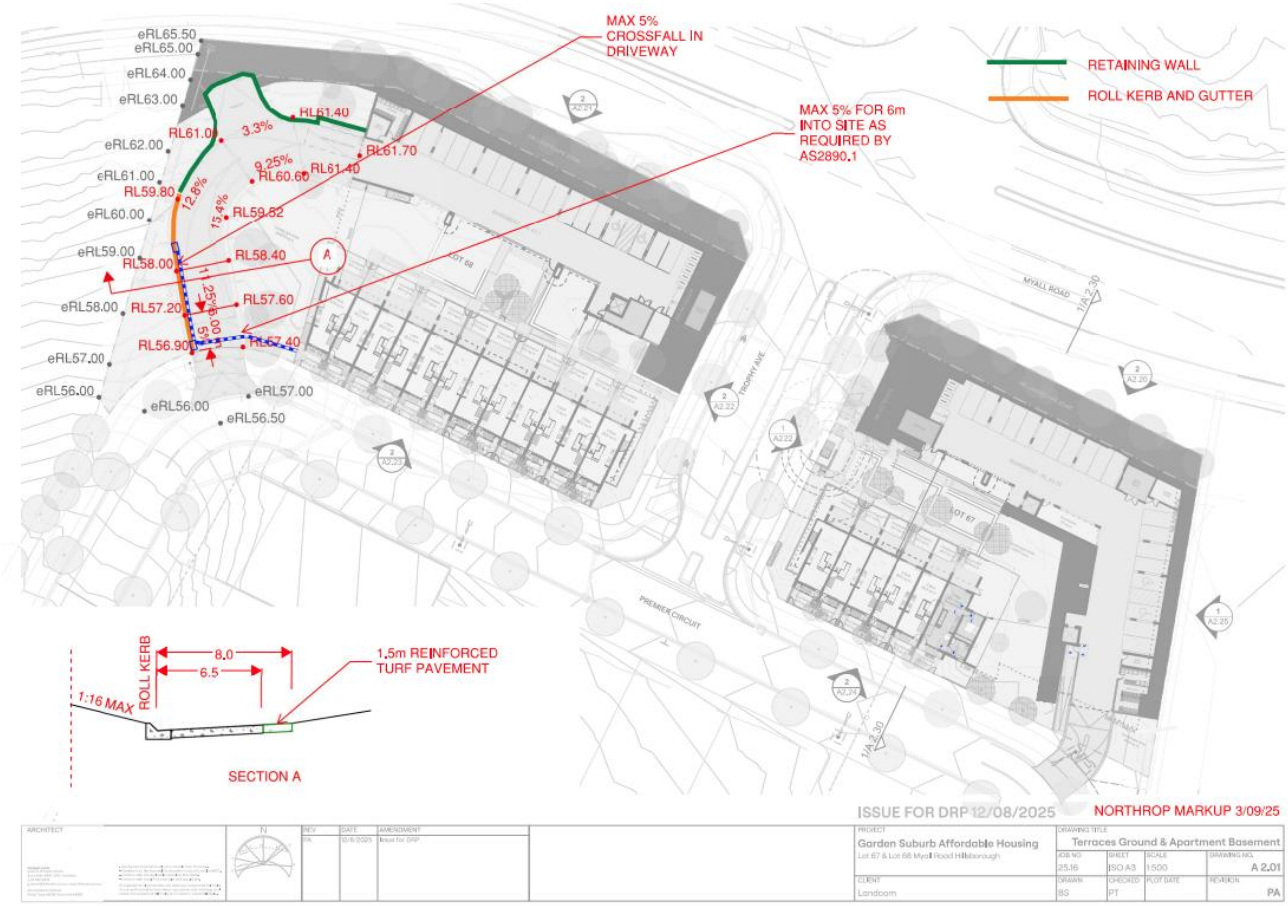



**Figure 3-4 – Civil concept plans – Lot 67 and 68**

*(Source: Northrop, Civil Plans, Rev PA, dated 12 August 2025)*

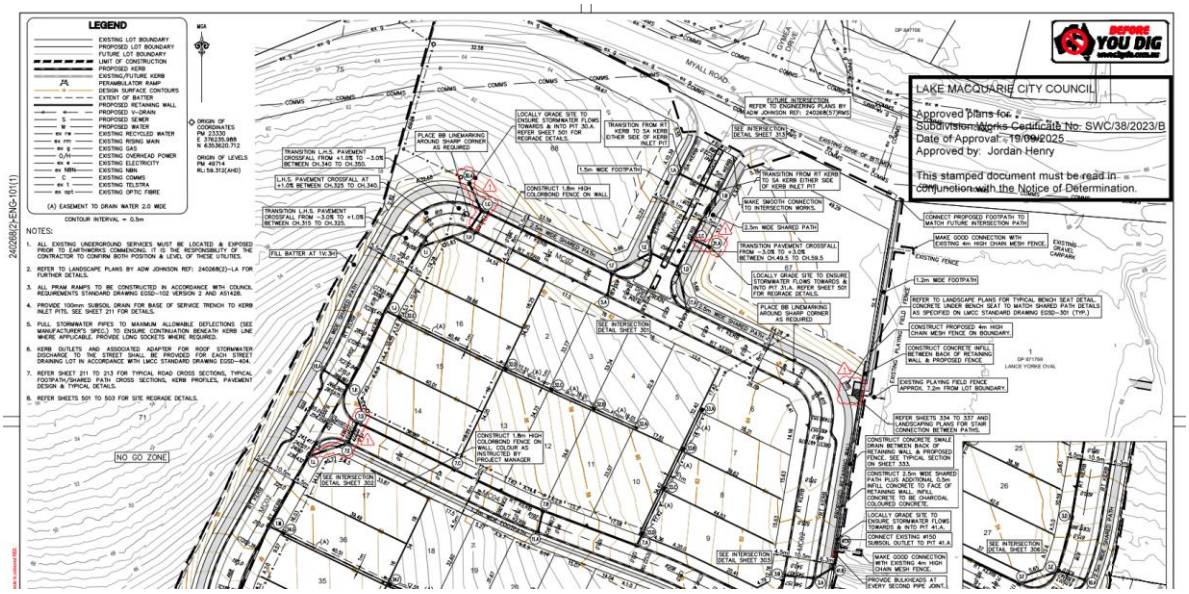



**Figure 3-5 – Stamped approved civil plans – proposed subdivision**

*(Source: ADW Johnson, Proposed subdivision, Rev 1, dated 10 September 2025)*

# 3.4 Services

## 3.4.1 Water supplies

The intent of measures is to provide adequate services of water for the protection of buildings during and after the passage of bushfire. Table 3-6 outlines the proposal's compliance with the acceptable solutions for reticulated water supply.

***Table 3-6 – Standards for reticulated water supplies (PBP)***

| ***Performance criteria: to provide adequate services of water for the protection of buildings during and after the passage of a bush fire, and to locate gas and electricity so as not to contribute to the risk of fire to a building*** | | |
|---|---|---|
| ***Acceptable Solution*** | ***Complies*** | ***Comments*** |
| Reticulated water is to be provided to the development where available. | ☑ | Reticulated water is proposed. |
| A static water and hydrant supply is provided for non-reticulated developments or where reticulated water supply cannot be guaranteed. | N/A | Reticulated water proposed. |
| Static water supplies shall comply with Table 5.3d. | N/A | Reticulated water proposed. |
| Fire hydrant, spacing, design and sizing comply with the relevant clauses of Australian Standard AS 2419.1:2021. | ☑ | Mitigation measure |
| Hydrants are not located within any road carriageway. | ☑ | Proposed drawings from Hills Thalis dated 12 August 2025 (see Figure 3-6) illustrate no hydrants within the road carriageway. |

| ***Performance criteria: to provide adequate services of water for the protection of buildings during and after the passage of a bush fire, and to locate gas and electricity so as not to contribute to the risk of fire to a building*** | | |
|---|---|---|
| Reticulated water supply to urban subdivisions uses a ring main system for areas with perimeter roads. | ☑ | Reticulated water proposed. Mitigation measure. |
| Fire hydrant flows and pressures comply with the relevant clauses of AS 2419.1:2021. | ☑ | Reticulated water proposed. Mitigation measure |
| All above-ground water service pipes are metal, including and up to any taps; and | ☑ | All above ground water services pipes external to the building will be metal. |
| Above-ground water storage tanks shall be of concrete or metal. | ☑ | Rain water tanks will be below ground. Mitigation measure. |

**Summary:**

- Reticulated water supply is proposed. Mitigation measure to include a ring main system for areas with perimeter roads.
- Rain water tanks of 20,000L to 30,000L proposed to both Lots 67 and 68 with dual submersible variable speed pump duty 3.5L/S @ 400KPA. This will be confirmed in detailed design stage.

**Considerations**

- Conduct a detailed review of hydrant placement to confirm compliance with AS 2419.1:2021
-

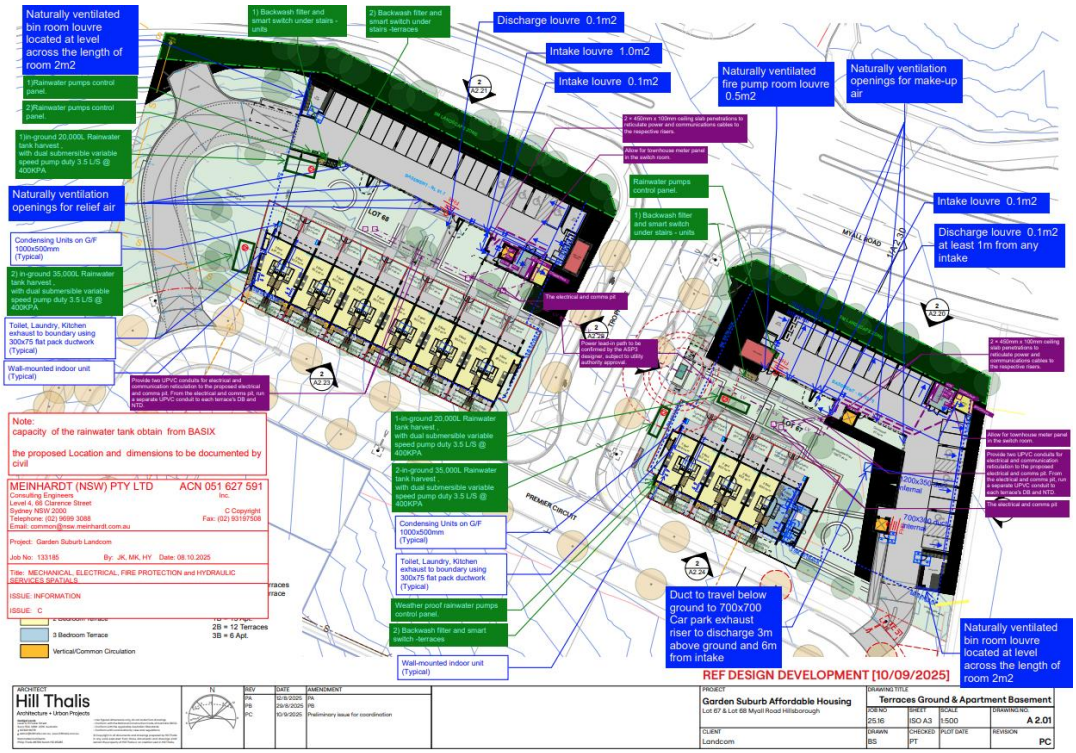



**Figure 3-6 – Building services proposed design**

*(Source: Hills Thalis, Building Services Sketch, Terraces Ground and Basement, Rev PC, dated 12 August 2025)*

### 3.4.2 Gas supplies

The intent of measures is to locate gas so as not to contribute to the risk of fire to a building. Table 3-7 outlines the required acceptable solutions for gas supply.

*Table 3-7 – Performance criteria for gas supplies (PBP guidelines)*

| ***Performance criteria: location and design of gas services will not lead to ignition of surrounding bushland or the fabric of buildings.*** | | |
|---|---|---|
| ***Acceptable Solution*** | ***Complies*** | ***Comments*** |
| reticulated or bottled gas is installed and maintained in accordance with AS/NZS 1596:2014 - *The storage and handling of LP Gas, the requirements of relevant authorities, and metal piping is used* | N/A | Is not proposed. |
| all fixed gas cylinders are kept clear of all flammable materials to a distance of 10m and shielded on the hazard side | N/A | Is not proposed. |
| connections to and from gas cylinders are metal; | N/A | Is not proposed. |
| polymer-sheathed flexible gas supply lines are not used; and | N/A | Is not proposed. |
| above-ground gas service pipes are metal, including and up to any outlets. | N/A | Is not proposed. |

**Summary:** No gas utilities proposed. Bottled gas (cylinders) is not supported or recommended and there should be a restriction on titles other than small bottles for BBQs. BBQs are proposed in communal areas of the landscaping design; however, these are proposed to be electric.

If future gas services are to be proposed, compliance with AS/NZS 1596:2014 and *PBP* must be verified through:

- Confirmation of gas supply type (reticulated or bottled) and its installation details.
- Assurance of adequate shielding, distance from flammable materials, and the use of fire-resistant materials like metal.
- Site verification to ensure compliance with *PBP*.

**Considerations:**

- If any future gas utilities are proposed, conduct an on-site inspection to validate compliance with the acceptable solutions. A restriction to title should be considered for future gas bottle connections to houses (note: BBQ gas bottles are permitted)

At the current stage, the detailed layouts for water, hydrants, electricity and gas infrastructure have not yet been finalised. It is anticipated that the future apartment buildings will connect to the existing reticulated water supply system. it is expected that compliance with *AS 2419.1 – Fire Hydrant Installations* and the requirements of *PBP* will be achieved as part of the detailed design and subdivision approval process.

A key infrastructure-related risk is posed by the existing overhead electricity transmission lines located to the north, south-west and east. These powerlines are in close proximity to unmanaged forest vegetation. The presence of this vegetation, combined with overhead infrastructure, increases the potential for ignition and fire spread, particularly under dry and windy conditions. In accordance with *PBP* recommendations, consideration should be given to managing ground fuel loads near existing powerlines.

Gas infrastructure is not proposed for the development, and in line with best practice for bushfire-prone areas, it is generally not recommended due to the potential life safety risks associated with pressurised gas systems during a bushfire event. Electrical supply systems are proposed to be installed underground.

In summary, while detailed utility layouts are yet to be finalised, the development is expected to utilise existing urban services in the surrounding area. Future infrastructure design will be required to meet relevant bushfire performance standards, particularly with regard to hydrant placement.

### 3.4.3 Electricity supply

The intent of measures is to locate electricity so as not to contribute to the risk of fire to a building.

Table 3-8 outlines the required acceptable solutions for the development's electricity supply.

*Table 3-8 – Standards for electricity services (PBP)*

| *Performance criteria: location of electricity services limits the possibility of ignition of surrounding bush land or the fabric of buildings.* | | |
|---|---|---|
| ***Acceptable Solution*** | ***Complies*** | ***Comments*** |
| Where practicable, electrical transmission lines are underground; | ☑ | The electrical reticulation to the new development will be underground. |
| Where overhead, electrical transmission lines are proposed as follows:<br>• lines are installed with short pole spacing of 30m, unless crossing gullies, gorges or riparian areas.<br>• no part of a tree is closer to a power line than the distance set out in ISSC3 Guideline for Managing Vegetation Near Power Lines. | ☑ | . Design will incorporate electrical transmission underground. |
| **Summary:** The reticulation of electricity to the new development will be underground.<br><br>**Considerations:**<br>• If overhead lines are used, compliance with pole spacing (30m) and vegetation clearance under ISSC3 guidelines must be ensured. | | |

## 3.5 Specific objectives for residential and rural-residential subdivisions

Although the proposed development is not a subdivision in the traditional sense, the specific objectives for residential and rural-residential subdivisions with a dwelling entitlement (outlined in the table below) have been applied in this assessment. This is due to the development's location adjacent to forest vegetation on mapped bushfire-prone land, and its direct interface with a residential subdivision immediately to the south, which shares proposed access roads. Given the similar context and bushfire exposure, applying these objectives ensures a consistent and appropriate level of bushfire risk assessment and mitigation across the connected developments.

*Table 3-9 – Specific objectives (residential and rural-residential subdivisions)*

| Specific objective | Compliance | Comment |
|---|---|---|
| Minimise perimeters of the subdivision exposed to the bush fire hazard (hourglass shapes, which maximise perimeters and create bottlenecks should be avoided); | ☑ | Can comply. |
| Minimise vegetated corridors that permit the passage of bush fire towards buildings | ☑ | Can comply – the landscaping design includes canopy cover; however, it does not exceed 15% and does not increase the bushfire risk present. |
| Provide for the siting of future dwellings away from ridge-tops and steep slopes, within saddles and narrow ridge crests | ☑ | Complies. The development site is not situated on or near to ridge-tops and steep slopes, within saddles and narrow ridge crests. |
| Ensure that APZs between a bush fire hazard and future dwellings are effectively designed to address the relevant bush fire attack mechanisms | ☑ | Complies. All APZs can achieve BAL 29. |
| Ensure the ongoing maintenance of APZs | ☑ | Can comply. Future maintenance to be implemented and compliance with future Vegetation Management Plan. |
| Provide adequate access from all properties to the wider road network for residents and emergency services | ☑ | Complies.<br>(Refer to the discussion in section 3.4.1). |
| Provide access to hazard vegetation to facilitate bush fire mitigation works and fire suppression; and | ☑ | Can comply (Refer to discussion in section 3.3) |
| Ensure the provision of an adequate supply of water and other services to facilitate effective firefighting | ☑ | Can comply.<br>(Refer to the discussion in section 3.4). |

## 3.6 Emergency management planning

Table 3-7 outlines the required performance criteria for the proposal's emergency procedures. The proponent for this development is committed to developing a Bushfire emergency Evacuation Plan, in accordance with the RFS requirements and *PBP*.

*Table 3-10 – Performance criteria for emergency and evacuation planning (PBP 2019)*

| *Performance criteria: a Bush Fire Emergency Management and Evacuation Plan is prepared* | | |
|---|---|---|
| ***Acceptable solution*** | ***Complies*** | ***Comments*** |
| Bush Fire Emergency Management and Evacuation Plan is prepared consistent with the:<br>• The NSW RFS document: A Guide to Developing a Bush Fire Emergency Management and Evacuation Plan; | ☑ | Mitigation measure |
| the Bush Fire Emergency Management and Evacuation Plan should include planning for the early relocation of occupants.<br><br>Note: A copy of the Bush Fire Emergency Management and Evacuation Plan should be provided to the Local Emergency Management Committee for its information prior to occupation of the development | ☑ | Mitigation measure |
| an Emergency Planning Committee is established to consult with residents in developing and implementing an Emergency Procedures Manual | ☑ | Mitigation measure |
| detailed plans of all emergency assembly areas including onsite and off-site arrangements as stated in AS 3745:2010 are clearly displayed, and an annually emergency evacuation is conducted. | ☑ | Mitigation measure |
| **Summary:** Prior to occupation, the proposed development must prepare and keep a copy of a Bushfire Emergency Management and Evacuation Plan (BEEP) onsite and provided to the Local Emergency Management Committee. | | |

# 4. CONCLUSION & RECOMMENDATIONS

## 4.1 Conclusion

The assessment found that bushfire can potentially affect the site from predominately forest vegetation to the west and south. The overall fire risk from this vegetation after considering fire history, climate, and available mitigation options is significant, with the southern portions of the subject land, representing the greatest bushfire threat.

The assessment has concluded that the proposed affordable housing apartments for residential purposes, as presented, can largely comply with the planning principles of *PBP.* There are some areas of technical deviation and areas for improvement such as:

- There is a technical deviation to the corner of Lot 68, where a dead end is illustrated in design. 'No stopping' or 'no parking' signage placement at the end of this turning point is recommended at the end of the access driveway.
- Conduct a detailed review of hydrant placement to confirm compliance with AS 2419.1:2021 and ensure hydrants are clear of road carriageways.

The road crossfall for the internal road to the west of Lot 68 deviates from *PBP*. The design incorporates a roll-top kerb and gutter structure, including reinforced turfed pavement to ensure ease of movement for firefighting vehicles.

A 'special fire protection purpose' such as a school or seniors living development could not be catered for in isolation from the development of the surrounding areas. Clearly, this is dependent on the size of such a facility. In the context of future urbanisation, however, this is seen as a long-term constraint. If the site was used for a special fire protection purpose, significantly greater setbacks (APZs) would be required.

The proposed site plan will also need to be supported by a utilities and services plan for the provision of water supplies. It is unclear if future fire brigade stations will be addressed in the overall strategic planning arrangements for the Garden Suburbs area. However, the development will be within proximity to existing brigade stations. The additional number of dwelling sites is not a problem on its own but needs to be considered in the overall context of developments nearby.

This report assesses and identifies the potential bushfire protection measures and has been included for the purposes of the overarching REF or Part 5 Assessment.

## 4.2 Recommendations

*TBE* makes the following recommendations as part of the Part 5 approval:

**Recommendation 1 –** The development including APZs is as generally indicated on the attached Schedule 1 - Plan of Bushfire Protection Measures and in Table 2-1 of this report. Future dwellings on Lot 68 must be constructed to achieve BAL-29 compliance (*AS 3959:2018*). Future dwellings on Lot 67 are to be BAL 12.5. A temporary APZ of a minimum of 12m may be required along the south of Lots 67 and 68, until the adjoining proposed residential subdivision is constructed and underway.

**Recommendation 2 –** Lots 67 and 68 are within 100m of bushfire prone vegetation and therefore require construction standards as per AS3959:2018. This includes verandas, facades and any balconies constructed from non-combustible material, ember protection such as aluminium screening and vent protection.

**Recommendation 3 –** Proposed landscaping designs by Inview Designs complies with *Appendix 4* of *PBP*. Planting of shrubs must be limited to ensure there is no continuous fuel ladder from the ground to the canopy of proposed planted trees. Avoid dense oil and fibrous species such as Eucalyptus spp., Leptospermum, Melaleuca, Conifers, Cypress pines, and Lantana. Avoid mulch or leaf litter in understory.

**Recommendation 4 –** Conduct a detailed review of hydrant placement to confirm compliance with AS 2419.1:2021.

**Recommendation 5 –** Preparation of a ground's maintenance plan and inclusion of ongoing bushfire management maintenance.

**Recommendation 6 –** Electrical reticulation and reticulated water are proposed and must be in accordance with *PBP* provisions. Implement a restriction on title to prevent the use of gas connections to dwellings. Small, bottled gas is permissible for BBQs.

**Recommendation 7** – Prior to occupation, preparation of a Bushfire Emergency and Evacuation Plan (BEEP) for each building to ensure emergency planning compliance by the buildings management committee.

# 5. INFORMATION SOURCES

## 5.1 Information collation

1) Aboriginal Heritage Information Management System (AHIMS).
2) ADW Johnson, *Proposed subdivision, Rev 1,* dated 10 September 2025
3) Conacher Environmental Group, Bushfire Assessment Report, Proposed Residential Subdivision Myall Road Hillsborough, Ref: 2080B, dated January 2013
4) Hills Thalis, *Building Services Sketch, Terraces Ground and Basement,* Rev PC, dated 12 August 2025
5) Hills Thalis*, Preliminary Designs, Garden Suburb Affordable Housing, Lot 67 & Lot 68 Myall Road Hillsborough*, Revision PA, dated 12 August 2025
6) Inview Design, *Landscaping Design Overall, Rev* 1, dated 12 August 2025
7) Lake Macquarie City Council 2014, *Lake Macquarie Development Control Plan 2014 Revision 38, Part 3, Residential Subdivision*, dated: 11 November 2024
8) *Lake Macquarie Local Environmental Plan 2014 (LMC LEP).*
9) NearMap Aerial Photography.
10) Northrop, *Civil Plans*, Rev PA, dated 12 August 2025)
11) NSW Planning Portal.
12) NSW SEED Portal.
13) *Rural Fires Act 1997 (RF Act).*

## 5.2 Bibliography


Australian Building Codes Board (2022) – *Building Code of Australia*, Class 1 and Class 10 Buildings Housing Provisions Volume 2.

Councils of Standards Australia AS3959 (2018) – *Australian Standard Construction of buildings in bush fire-prone areas.*

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

Rural Fire Service (2019) - *Planning for bush fire protection – a guide for councils, planners, fire authorities and developers*. NSW Rural Fire Service.

# SCHEDULE 1. PLAN OF BUSHFIRE ASSESSMENT

DISCLAIMER: CAD SK 2.10-Terraces Ground & Apartment Basement.dwg not georeferenced and has been aligned to georeferenced CAD EXPORT-240268(2)-ENG(G)-2025-02-12.dwg. Verification by registered surveyor required prior to finalisation

MYALL ROAD

PREMIER CIRCUIT

FORWARD STREET

TROPHY ROAD

ENTRY

Level

68

67

min29m

min12m

>0-5° DS

>0-5° DS

>0-5°

>5-10°

>5-10°

UPS - flat

MANAGED LAND

Lance York Oval

**Proposed Residential Subdivision**

**Cleared Land**

**Legend**

Aerial source: Nearmap

- Site boundary (source:CAD)
- Buildable area
- Contour (source:LPI)
- Subdivision (source:CAD)
- Managed Land
- Buildable area
- Proposed road
- Asset Protection Zone (<29kW/m²)
- Temporary Asset Protection Zone

0 20 40 m

Disclaimer: The mapping is indicative of available space and location of features which may prove critical in assessing the viability of the proposed works. Mapping has been produced on a map base with an inherent level of inaccuracy, the location of all mapped features are to be confirmed by a registered surveyor.

| PROJECT & MXD REFERENCE | DATE & ISSUE NUMBER | SCALE & COORDINATE SYSTEM |
|---|---|---|
| Myall Rd, Garden Suburb LAND21.3_BF001 | 16/10/2025 Issue 1 SC | 1:1,000 @A3 GDA2020 MGA Zone 56 |

TITLE

# Schedule 1: Affordable Housing Project: Bushfire Protection Measures

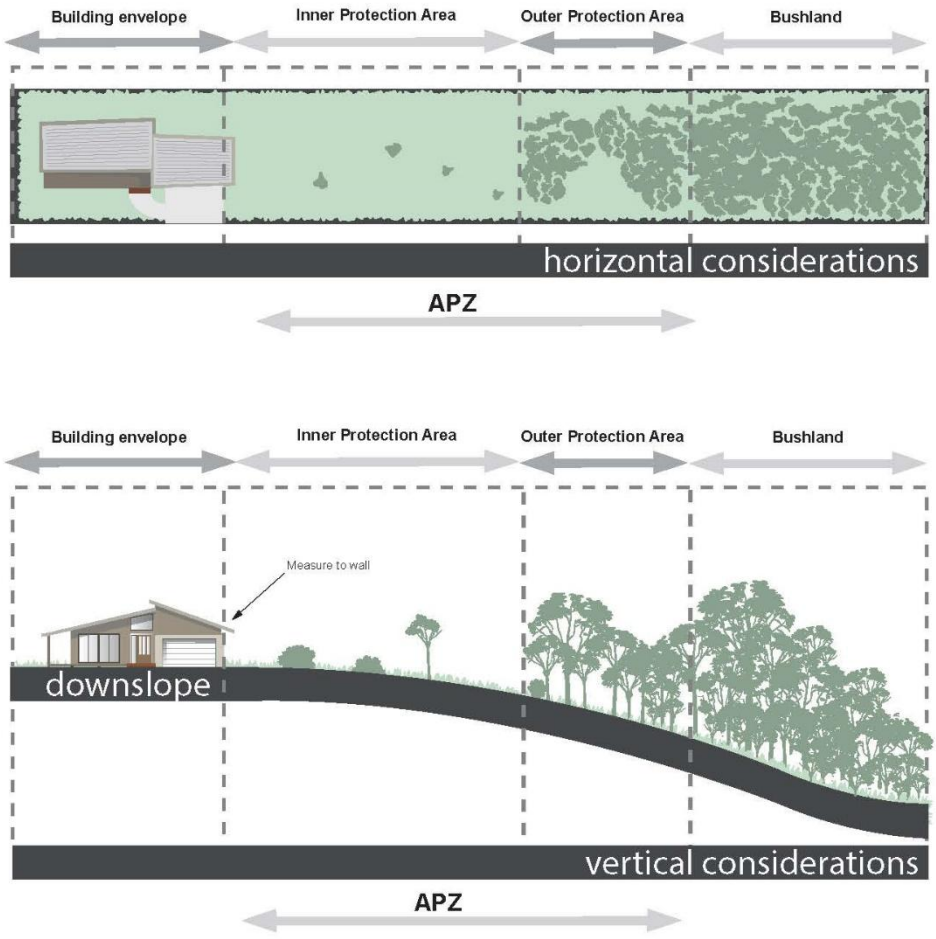
Document Path: N:\GIS STORAGE\N Drive\1_GDA2020_MappingProjects\LAND21_MyallRd_GardenSuburb\MXDs\LAND21.3_BF001.mxd

TRAVERS BUSHFIRE & ECOLOGY
A TBE ENVIRONMENTAL COMPANY

# SCHEDULE 2. MANAGEMENT OF ASSET PROTECTION ZONES

The RFS provides basic advice in respect of managing APZs through documents such as, *Standards for Asset Protection Zones* (RFS, 2005), with landscaping to comply with Appendix 4 of *PBP*.

The APZ generally consists of two subordinate areas, an inner protection area (IPA) and an outer protection area (OPA). The OPA is closest to the bush, and the IPA is closest to the dwellings. The property is only to be managed to IPA standards. A typical APZ is graphically represented below.




**APZs and progressive reduction in fuel loads**

*(Source: PBP)*

> **Note:** Vegetation management as shown is for illustrative purposes only. Specific advice is to be sought regarding vegetation removal and retention from a qualified and experienced expert to ensure APZs comply with the RFS performance criteria.

The following table adapted from *PBP* provides maintenance advice for vegetation within the IPA and OPA. The APZ is to be maintained in perpetuity and maintenance should be undertaken regularly, particularly in advance of the bushfire season.

| | Inner Protection Area | Outer Protection Area |
|---|---|---|
| **Trees** | ➢ Tree canopy cover should be **less than 15%** at maturity;<br>➢ Trees at maturity should not touch or overhang the building;<br>➢ Lower limbs should be removed up to a height of **2m above the ground**;<br>➢ Tree canopies should be separated by **2 to 5m**; and<br>➢ Preference should be given to retaining smooth barked and evergreen trees. | ➢ Tree canopy cover should be **less than 30%;** and<br>➢ Canopies should be separated by **2 to 5m**. |
| **Shrubs** | ➢ Large discontinuities or gaps in the vegetation should be provided to slow down or break the progress of fire towards buildings;<br>➢ Shrubs should not be located under trees;<br>➢ Shrubs should form **less than 10%** ground cover; and<br>➢ Clumps of shrubs should be separated from exposed windows and doors by a distance of at least twice the height of the vegetation. | ➢ Shrubs should not form a continuous canopy; and<br>➢ Shrubs should **form less than 20%** of ground cover. |
| **Grass and Leaf Litter** | ➢ Grass should be kept mown to a height of **less than 100mm**; and<br>➢ Leaves and other debris should be removed | ➢ Grass should be kept mown to a height of **less than 100mm**; and<br>➢ Leaf and other debris should be removed. |
| | **All Management Zones** | |
| **Weeds** | ➢ All weeds should be removed in accordance with best practice guidelines, and measures taken to prevent their further spread | |
| **Landscaping** | ➢ Suitable impervious areas being provided immediately surrounding the building such as courtyards, paths and driveways;<br>➢ Restrict planting in the immediate vicinity of the building which may over time and if not properly maintained come into contact with the building;<br>➢ When considering landscape species consideration needs to be given to estimated size of the plant at maturity;<br>➢ Avoid species with rough fibrous bark, or which retain/shed bark in long strips or retain dead material in their canopies;<br>➢ Use smooth bark species of trees species which generally do not carry a fire up the bark into the crown;<br>➢ Avoid planting of deciduous species that may increase fuel at surface / ground level (i.e. leaf litter);<br>➢ Avoid climbing species to walls and pergolas;<br>➢ Locate combustible materials such as woodchips / mulch, flammable fuel stores away from the building;<br>➢ Use of low flammability vegetation species. | |