

Bushfire Hazard Assessment

SSD-19618251

Concept Masterplan,
Industrial Development and
Stage 1 Works

Elizabeth Enterprise Precinct - Stage 1
Badgerys Creek

Prepared for
Mirvac Projects Pty Ltd

Project Name:	Elizabeth Enterprise Precinct – Stage 1 (SSD-19618251) (Concept Masterplan and Stage 1 Works)
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1. Summary

Table 1 is a summary of compliance with relevant documents and approaches to limit bushfire attack and meet the requirements of the NSW planning framework for new development in Bushfire Prone Areas.

Table 1: Summary

Planning for Bushfire Protection 2019 Classification	"Other" commercial/ industrial
Location	Lot 100 1283398 and Lot 741 DP 810111
Local Government Area	Penrith
Can this proposal comply with AS3959, 2009	AS3959, 2009 does not apply as a DTS Provision
Does this development comply with the requirements of <i>Planning for Bushfire Protection 2019</i>?	YES
Does this development comply with the Aims and objectives of <i>Planning for Bushfire Protection 2019</i>?	YES
Is referral to the NSW RFS required?	NO
Assessment Framework	<input checked="" type="checkbox"/> <i>Planning for Bushfire Protection 2019</i> <input type="checkbox"/> Meets the deemed to satisfy provisions <input checked="" type="checkbox"/> Alternate solution/ performance-based assessment

2. Introduction

Blackash Bushfire Consulting has been engaged by Mirvac Projects Pty Ltd to provide a Bushfire Hazard Assessment report to support a State Significant Development application for the proposed industrial development, Elizabeth Enterprise Precinct - Stage 1 Concept Masterplan.

The Estate is shown in Figure 1 and legally described as Lot 100 1283398 and Lot 741 DP 810111 with an area of approximately 133ha, the site is located to the north of Elizabeth Drive, Badgerys Creek within the Penrith City Council Local Government Area (LGA).

The site has approximately 538m of direct frontage to Elizabeth Drive with a proposed signalised intersection providing vehicular access onto Elizabeth Drive.

The site has bushfire prone land adjoining it and bushfire has been a key consideration in the design process. Commercial and industrial development is designated as "other" development in PBP 2019. As "other" development, a key issue for the proposal will be meeting the aim and objectives of *Planning for Bushfire Protection* and the performance requirements for commercial and industrial development.

This report has been completed having regard to Secretary for Planning and Environment's (the Secretary) Environmental Assessment Requirements (SEARs) issued for the proposal on 26 August 2024. The SEARs require the following in relation to bushfire:

"... a bushfire assessment against the requirements of Planning for Bush Fire Protection (NSW Rural Fire Service, 2019)."

The proposed industrial facility is required to respond and implement an appropriate level of bushfire protection measures, as per *Planning for Bushfire Protection 2019* (PBP 2019). This report will demonstrate that an appropriate combination of protection measures has been provided to meet the aims and objectives, and the provisions of Section 8.3.1 and 8.3.10, of *Planning for Bush Fire Protection 2019*.

This assessment has been prepared by Corey Shackleton, Principal Bushfire & Resilience (FPAA BPAD Level 3 Certified Practitioner No. BPD-L3-34603) who is recognised by the NSW RFS as qualified in bushfire risk assessment and have been accredited by the Fire Protection Association of Australia as a suitably qualified consultant to undertake alternative solution proposals.

3. Site Context

EEP Stage 1 Concept Plan:

The Concept Plan proposes and outlines the framework for the staged development of EEP Stage 1 for an industrial estate, comprising seven (7) industrial buildings (warehouse and distribution centres or general industrial use) including ancillary offices, dock offices, café and associated infrastructure including roads, stormwater and utilities, with landscaping. The Concept Plan applies across Lot 100 DP1283398 and part Lot 741 DP81011.

Stage 1A Development Works:

The Stage 1A Development, the first development works of the EEP Stage 1 Concept Plan, comprises:

- site preparation works;
- site servicing and infrastructure works including stormwater infrastructure and road works;
- subdivision of Lot 100 DP1283398 and Lot 741 DP81011;
- construction of Warehouse 2 and Warehouse 6 for the purpose of warehouse and distribution centres or general industrial use;
- construction of hardstand areas for loading/unloading and vehicle manoeuvring;
- construction of on-site car parking;
- landscaping, including on-lot landscaping and street reserve landscaping;
- estate signage comprising a main estate entry signage and signage zones; and
- operation hours of 24 hours, 7 days a week.



Legend

Watercourse

Subject Land



DKGIS

Date: 12/10/2023

0 0.25 0.5

Kilometers

Coordinate System: GDA2020 MGA Zone 56

Imagery: © Nearmap

Figure 1: Site Location

4. Legislative Framework

The proposed industrial development is designated as “other” development by PBP 2019.

The site is identified as ‘bushfire prone land’ (see Figure 2) for the purposes of Section 10.3 of the *Environmental Planning and Assessment Act, 1979* (EPA Act) and the legislative requirements for development on bushfire prone lands are applicable. All development on bushfire prone land must consider and comply with PBP 2019. However, industrial development has considerable flexibility and the nature of the development often results in the structures providing a higher degree of bushfire resistance than required by the NSW RFS.

As “other” development, the proposed industrial development and future development is addressed through demonstrating compliance with the aim and objectives of PBP.

Under the building classification system within the *National Construction Code* (NCC), Class 5 to 8 buildings include offices, shops, factories, warehouses, public car parks and other commercial and industrial facilities. The NCC does not provide for any bushfire specific performance requirements for these classes of building. As such the *Australian Standard for Construction of Buildings in Bushfire Prone Areas* (AS 3959) and the NASH Standard are not considered as a set of ‘deemed to satisfy’ provisions. However, compliance with AS 3959 and NASH should be considered when meeting the aims and objectives of PBP.

Whilst bushfire is not captured in the NCC for Class 5-8 buildings or storage of the pallets, PBP 2019¹ articulates the following objectives which will be applied in relation to access, water and services, and emergency and evacuation planning:

- *to provide safe access to/from the public road system for firefighters providing property protection during a bush fire and for occupant egress for evacuation;*
- *to provide suitable emergency and evacuation (and relocation) arrangements for occupants of the development;*
- *to provide adequate services of water for the protection of buildings during and after the passage of bush fire, and to locate gas and electricity so as not to contribute to the risk of fire to a building; and*
- *provide for the storage of hazardous materials away from the hazard wherever possible.*

The general fire safety construction provisions (of the NCC) are taken as acceptable solutions, however construction requirements for bush fire protection will need to be considered on a case-by-case basis.

¹ Planning for Bushfire Protection 2019 (p.76)

Because of their size, complexity, importance and/or potential impact, the Department of Planning, Industry and Environment (DPIE) is predominantly responsible for assessing development applications relating to State Significant Development. The Minister for Planning is the consent authority for SSD applications.

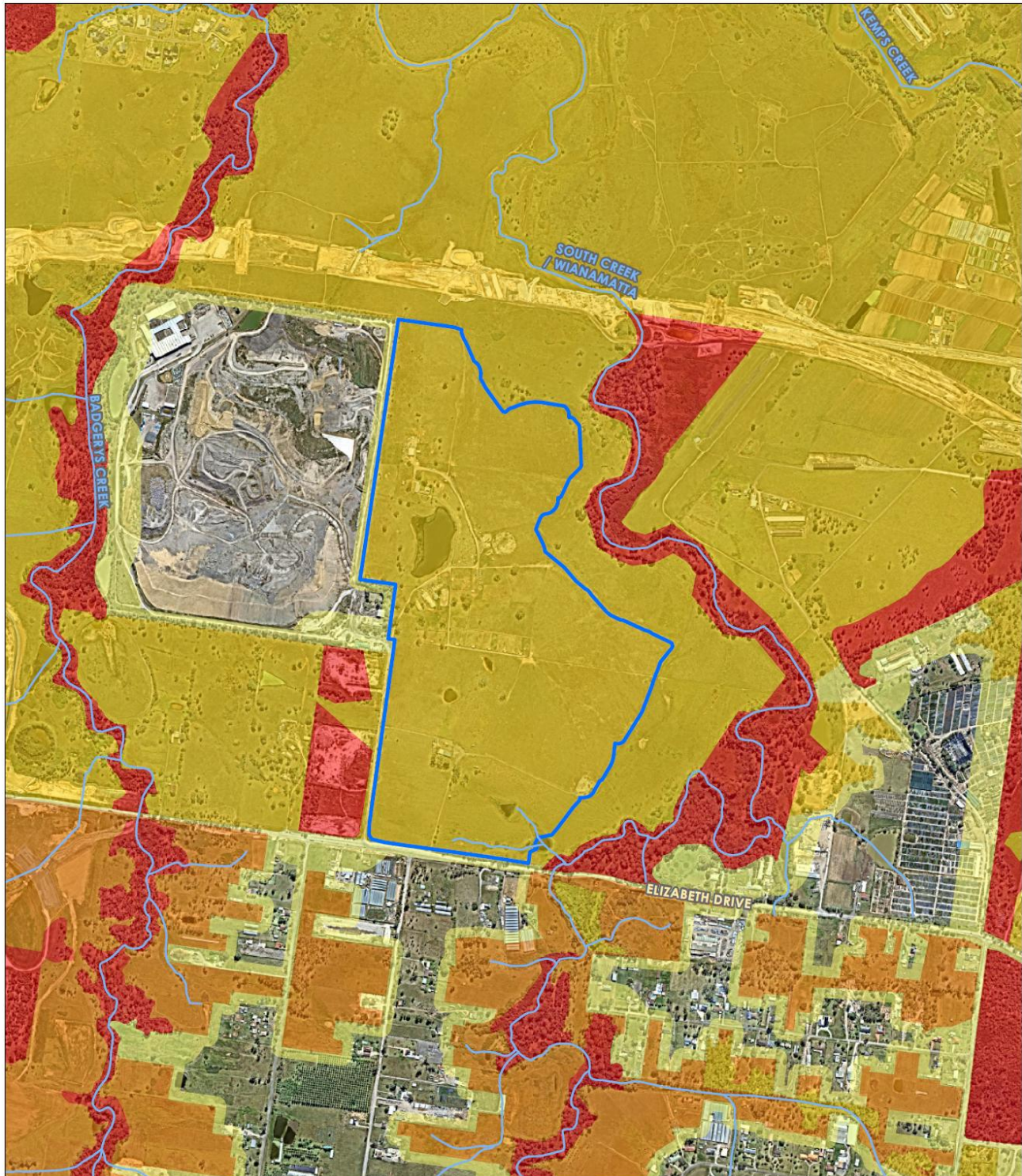
Applications designated as state significant projects are exempt from requiring a bushfire safety authority (BFSA). Given their scale however, the requirements of PBP should still be applied, and consultation with the NSW RFS has already occurred as part of the original SSD approval process.

5. Bushfire Prone Land

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 NSW RFS.

Figure 2 shows the Bushfire Prone Land Map for the site. The extract from the Penrith City Bushfire Prone Map shows that the area associated with South Creek in the east of the site contains a mixture of Category 1 and Category 2 Bushfire Prone Vegetation. Two small pockets of Category 1 vegetation adjoin the site to the west, while the entire site has been mapped as Category 2.



Legend

- Watercourse
- Subject Land
- Bushfire Prone Land**
 - Vegetation Category 1
 - Vegetation Category 2
 - Vegetation Category 3
 - Vegetation Buffer



Date: 12/10/2023

0 250 500

Meters

Coordinate System: GDA2020 MGA Zone 56

Imagery: © Nearmap

Figure 2: Bushfire Prone Land

6. The Proposal

This State Significant Development (SSD) application (SSD 19618251) seeks approval for a Concept Masterplan across the Elizabeth Enterprise site.

The Concept Plan proposes and outlines the framework for the staged development of EEP Stage 1 for an industrial estate, comprising seven (7) industrial buildings (warehouse and distribution centres or general industrial use) including ancillary offices, café and associated infrastructure including roads, stormwater and utilities, with landscaping. The Concept Plan applies across Lot 100 DP1283398 and part Lot 741 DP81011.

The Secretary's Environmental Assessments Requirements (SEARS) for the EEP were issued on 26 August 2024 under SSD-19618251 and contain a requirement that the EIS for the Master Plan and Stage 1 works must include an assessment against the requirements of *Planning for Bushfire Protection 2019*.

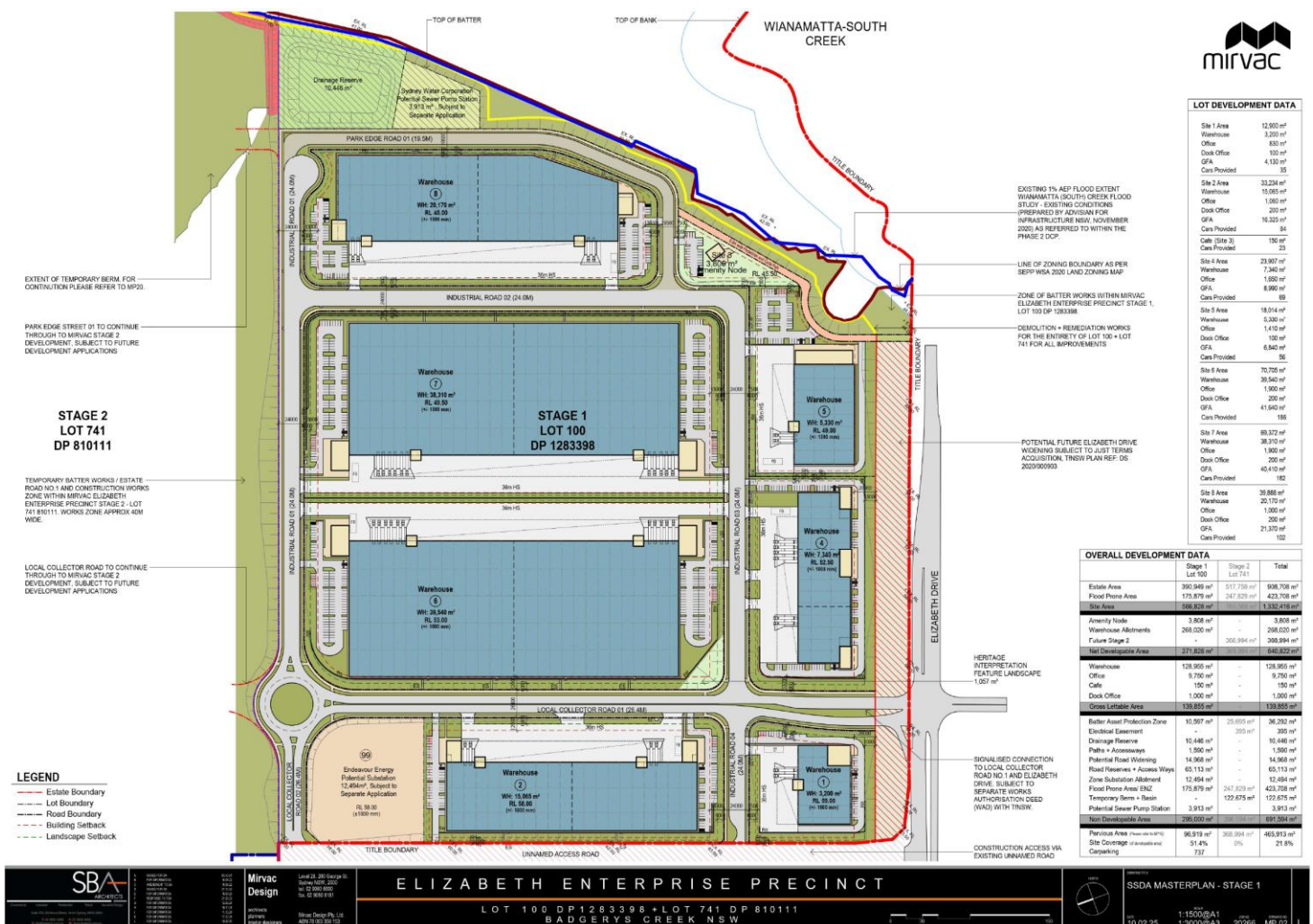


Figure 3: Proposed Concept Masterplan – Stage 1

7. Site Assessment Methodology

The Bushfire Assessment Report is based on an assessment of the site utilising the following resources:

- *Planning for Bushfire Protection* (NSW RFS, 2019);
- Aerial mapping; and
- Detailed GIS analysis.

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

7.1. Bushfire Hazard

An assessment of the bushfire hazard is necessary to determine the application of bushfire protection measures such as Asset Protection Zone (APZ) locations and dimensions and future building levels.

The vegetation formations (bushfire fuels) and the topography (effective slope) combine to create the bushfire threat that may affect bushfire behaviour at the site and which determine the planning and building response of PBP 2019.

7.2. Vegetation

Predominant Vegetation is classified by structure or formation using the system adopted by Keith (2004) and by the general description using PBP 2019. Vegetation types give rise to radiant heat and fire behaviour characteristics. The predominant vegetation is determined over a distance of at least 140 metres in all directions from the proposed site boundary or building footprint on the development site. Where a mix of vegetation types exist, the type providing the greater hazard is said to predominate.

Pockets of adjoining land to the west have been identified as a bushfire hazard, while the main bushfire threat arises from the riparian corridor associated with South Creek (see Figure 4). The South Creek riparian corridor is Forested Wetland and exists only within the isolated corridor associated with the creek.

7.3. Slopes Influencing Bushfire Behavior

The 'effective slope' influencing fire behaviour approaching the sites has been assessed in accordance with the methodology specified within PBP 2019. This is conducted by measuring the worst-case scenario slope where the vegetation occurs over a 100 metre transect measured outwards from the development boundary or the existing/ proposed buildings.

The land is relatively flat with the site generally falling towards the forested wetland in the South Creek riparian corridor (Figure 4).

7.4. Fire Weather

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

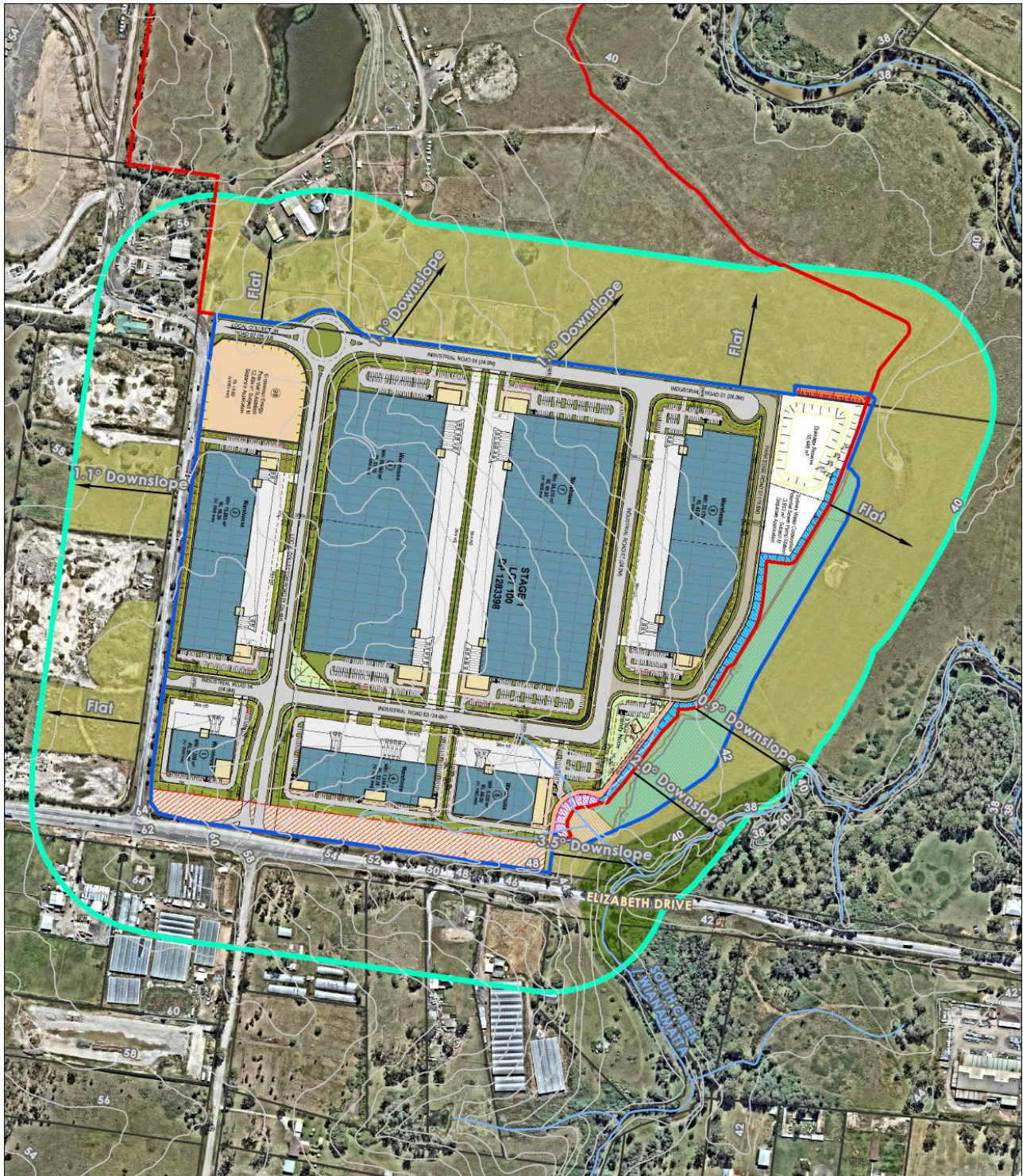


Figure 4: Vegetation and Slope

7.5. Asset Protection Zones

An Asset Protection Zone (APZ) is a buffer zone between a bushfire hazard and buildings. The APZ is managed progressively to minimise fuel loads and reduce potential radiant heat levels, flame, smoke and ember attack. The appropriate APZ distance is based on vegetation type, slope and the nature of the development.

The APZ can include roads or properties managed to be consistent with APZ standards set out in NSW RFS document *Standards for Asset Protection Zones*. The APZ provides a fuel-reduced, physical separation between buildings and bush fire hazards is a key element in the suite of bush fire measures and dictates the type of construction necessary to mitigate bushfire attack.

PBP 2019 requires APZs for commercial and industrial development to provide a defensible space and minimise material ignition. APZs are shown in Figure 5 and are compliant with PBP 2019.

The site will be managed and maintained to prevent the spread of a bushfire towards the building and to prevent the spread of fire onto or from the site in accordance with section 63 of the *Rural Fires Act, 1997* (RF Act). The area around the buildings is cleared and maintained to mineral earth or non-combustible surfaces and is not a fire hazard.

Tables 2 - 8 (below) provide a summary of the APZ for the proposed precincts and Figure 5 provides a depiction of the APZ.

Table 2: APZ Assessment – Warehouse 1.

Direction	Slope	Vegetation	Flame Zone Width	APZ Proposed
North	NA	No hazard	Nil	NA
East	NA	No hazard	Nil	NA
South	NA	No hazard	Nil	NA
West	Level	Grassland	8 metres	>26 metres

Table 3: APZ Assessment – Warehouse 2.

Direction	Slope	Vegetation	Flame Zone Width	APZ Proposed
North	0-5° Downslope	Grassland	9 metres	>26 metres
East	NA	No hazard	Nil	NA
South	NA	No hazard	Nil	NA
West	0-5° Downslope	Grassland	9 metres	>26 metres

Table 4: APZ Assessment – Warehouse 4.

Direction	Slope	Vegetation	Flame Zone Width	APZ Proposed
North	NA	No hazard	Nil	NA
East	NA	No hazard	Nil	NA
South	NA	No hazard	Nil	NA
West	NA	No hazard	Nil	NA

Table 5: APZ Assessment – Warehouse 5.

Direction	Slope	Vegetation	Flame Zone Width	APZ Proposed
North	NA	No hazard	Nil	NA
East	0-5° Downslope	Forested Wetland	9 metres	>20 metres
South	NA	No hazard	Nil	NA
West	NA	No hazard	Nil	NA

Table 6: APZ Assessment – Warehouse 6.

Direction	Slope	Vegetation	Flame Zone Width	APZ Proposed
North	0-5° Downslope	Grassland	12 metres	>26 metres
East	NA	No hazard	Nil	NA
South	NA	No hazard	Nil	NA
West	NA	No hazard	Nil	NA

Table 7: APZ Assessment – Warehouse 7.

Direction	Slope	Vegetation	Flame Zone Width	APZ Proposed
North	0-5° Downslope	Grassland	12 metres	>26 metres
East	NA	No hazard	Nil	NA
South	NA	No hazard	Nil	NA
West	NA	No hazard	Nil	NA

Table 8: APZ Assessment – Warehouse 8.

Direction	Slope	Vegetation	Flame Zone Width	APZ Proposed
North	Level	Grassland	10 metres	>26 metres
East	0-5° Downslope	Grassland	10 metres	>15 metres
South	NA	No hazard	Nil	NA
West	NA	No hazard	Nil	NA



Legend

- | | | | |
|--|--------------|------------------------------|-----------------------------|
| | Watercourse | Vegetation Class | |
| | Contour - 2m | | Coastal Foodplain Wetlands |
| | Stage 1 | | Grassland |
| | Subject Land | Asset Protection Zone | |
| | Cadastre | | Asset Protection Zone - 10m |
| | | | Asset Protection Zone - 12m |



Date: 19/02/2025

0 100 200

Meters

Coordinate System: GDA2020 MGA Zone 56

Imagery: © Nearmap

Figure 5: Minimum Asset Protection Zone Requirements

7.6. Bushfire Attack Levels

The Bushfire Attack Level (BAL) is a means of measuring the severity of a building's or sites potential exposure to ember attack, radiant heat and direct flame contact. In the Building Code of Australia, the BAL is used as the basis for establishing the requirements for residential construction to improve protection of building elements.

The Bushfire Attack Levels to the site have been determined based on the requirements of PBP 2019 through Table A1.12.5. As "Other" development, the development must comply with objective 3 of PBP 2019 which requires that the development:

3. *Provide appropriate separation between a hazard and buildings, which, in combination with other measures, prevent the likely fire spread to buildings.*

Asset Protection Zones (see section 7.5) will be provided around the development that will include perimeter roads and hardstand areas. Where required, the buildings will be constructed to meet the relevant requirements of AS3959-2018 as identified in PBP 2019.

The building requirements for design and construction vary according to the bushfire attack level for the building. The building requirements for each BAL are set out in *Australian Standard: 3959 Construction of buildings in bushfire-prone areas 2009 (AS3959)*.

Tables 9 - 14 (below) provides a summary of the Bushfire Attack Levels assessment, while Figure 8 provides a detailed map of the BALs as they apply across the buildings.

Table 9: Bushfire Attack Levels – Warehouse 1.

Direction	Slope	Vegetation	APZ Proposed	Bushfire Attack Level
North	NA	No hazard	Nil	See Figure 6
East	NA	No hazard	Nil	See Figure 6
South	NA	No hazard	Nil	See Figure 6
West	Level	Grassland	>26 metres	See Figure 6

Table 9: Bushfire Attack Levels – Warehouse 2.

Direction	Slope	Vegetation	APZ Proposed	Bushfire Attack Level
North	0-5° Downslope	Grassland	>26 metres	See Figure 6
East	NA	No hazard	Nil	See Figure 6
South	NA	No hazard	Nil	See Figure 6
West	0-5° Downslope	Grassland	>26 metres	See Figure 6

Table 10: Bushfire Attack Levels – Warehouse 4.

Direction	Slope	Vegetation	APZ Proposed	Bushfire Attack Level
North	NA	No hazard	NA	No Requirement
East	NA	No hazard	NA	No Requirement
South	NA	No hazard	NA	No Requirement
West	NA	No hazard	NA	No Requirement

Table 11: Bushfire Attack Levels – Warehouse 5.

Direction	Slope	Vegetation	APZ Proposed	Bushfire Attack Level
North	NA	No hazard	Nil	See Figure 6
East	0-5° Downslope	Forested Wetland	>20 metres	See Figure 6
South	NA	No hazard	Nil	See Figure 6
West	NA	No hazard	Nil	See Figure 6

Table 12: Bushfire Attack Levels – Warehouse 6.

Direction	Slope	Vegetation	APZ Proposed	Bushfire Attack Level
North	0-5° Downslope	Grassland	>26 metres	See Figure 6
East	NA	No hazard	Nil	See Figure 6
South	NA	No hazard	Nil	See Figure 6
West	NA	No hazard	Nil	See Figure 6

Table 13: Bushfire Attack Levels – Warehouse 7.

Direction	Slope	Vegetation	APZ Proposed	Bushfire Attack Level
North	0-5° Downslope	Grassland	>26 metres	See Figure 6
East	NA	No hazard	Nil	See Figure 6
South	NA	No hazard	Nil	See Figure 6
West	NA	No hazard	Nil	See Figure 6

Table 14: Bushfire Attack Levels – Warehouse 8.

Direction	Slope	Vegetation	APZ Proposed	Bushfire Attack Level
North	Level	Grassland	>26 metres	See Figure 6
East	0-5° Downslope	Forested Wetland	>15 metres	See Figure 6
South	NA	No hazard	Nil	See Figure 6
West	NA	No hazard	Nil	See Figure 6

7.6.1. Application of AS3959 (2018)

Construction must comply with the corresponding Bushfire Attack Level (BAL) as shown in Figure 6.

The application of each BAL is as defined on Figure 6 and not broadly applied across the entire elevation/building. The construction must comply with corresponding sections of the Australian Standard AS3959-2018 *Construction of buildings in bush fire-prone areas* or NASH Standard (1.7.14 updated) *National Standard Steel Framed Construction in Bushfire Areas* – 2014 as appropriate, and Section 7.5 of *Planning for Bush Fire Protection 2019*.

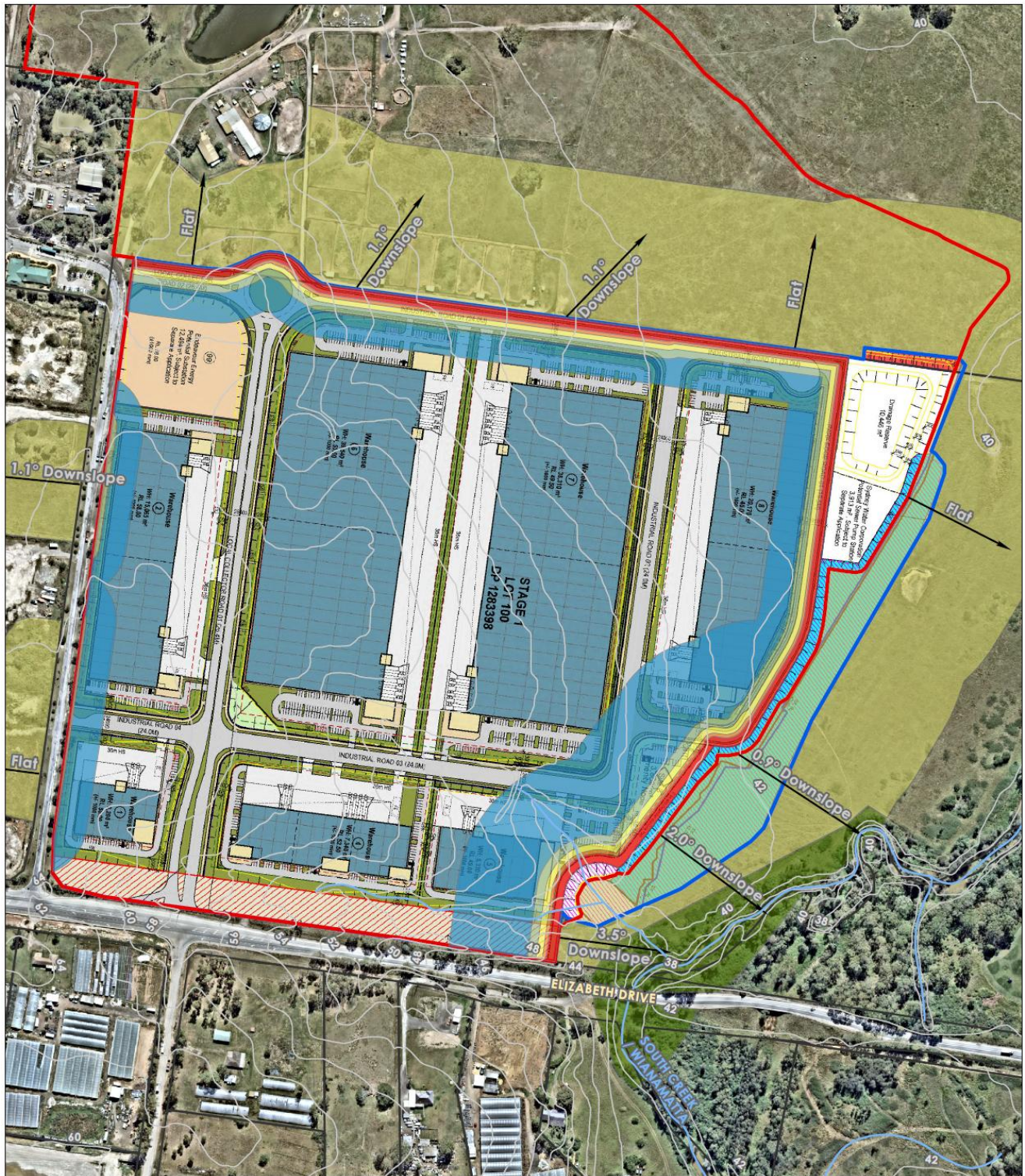
The construction for the remainder of the proposed buildings not denoted with a BAL in Figure 6 is greater than 100 metres from any bushfire hazard. Consistent with AS3959, construction greater than 100 metres from a bushfire hazard is classified as BAL-Low. AS3959 describes BAL-Low as “*There is insufficient risk to warrant specific construction requirements*”. Therefore, the construction for the remainder of the proposed building not denoted with a BAL in Figure 6, is appropriately BAL-Low.

The construction of the buildings in this manner complies with *Planning for Bush Fire Protection 2019* and the National Construction Code (NCC).

8. Water Supply and Utilities

PBP 2019 (p. 47) requires that 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.

Suitable water supply arrangements will be provided for firefighting that meet the NSW RFS requirements. A reticulated water supply for potable water supply and fire hydrants will be provided to the site. The fire-fighting water supply to the proposed buildings shall comply with the Building Code of Australia [BCA] and A.S. 2419.1 – 2021.



Legend

	Watercourse	Vegetation Class		BAL - 40
	Contour - 2m			BAL - 29
	Stage 1			BAL - 19
	Subject Land	Bushfire Attack Level (BAL)		BAL - 12.5
	Cadastre			BAL - Flame Zone

Date: 19/02/2025
 0 100 200
 Meters
 Coordinate System: GDA2020 MGA Zone 56
 Imagery: © Nearmap

Figure 6: Bushfire Attack Levels

9. Access

PBP 2019 requires that the design of access roads enables safe access and egress for people attempting to leave the area while emergency service personnel are arriving to undertake firefighting operations.

Figure 3 shows the Estate Masterplan which includes the access to the site.

Vehicular access to the Estate will be provided via Elizabeth Drive which connects in the southern part of the Estate. Elizabeth Drive links well into the broader public road network, including to Luddenham Road in the west and through to the Mamre Road and the M7 Motorway in the east.

The internal road network will be constructed to provide heavy rigid and articulated vehicle access to each of the proposed buildings. This internal road network is designed to provide access for a prime mover and semi-trailers. This design is more than adequate to accommodate fire-fighting appliances like NSW RFS Category 1 Tankers and Fire & Rescue NSW Composite and Aerial Appliances.

The internal road design provides access around each of the proposed facilities and to the bushfire prone vegetation within the riparian corridor along the eastern boundary. This is provided by a Park Edge Road.

Given the comprehensive nature of the road design, access complies with the requirements of PBP 2019.

10. Assessment Against the Aim and Objective of PBP

All development in Bushfire Prone Areas needs to comply with the aim and objectives of PBP. Table 15 shows the compliance with PBP.

Table 15: Compliance with Aim & Objectives of PBP.

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

The suite of bushfire protection measures provided for the proposed development satisfies the objectives for buildings of Class 5-8 under the NCC as identified in section 8.3.1 of PBP 2019.

11. Recommendations

The following recommendations are made to ensure the Elizabeth Enterprise Precinct is provided with adequate bushfire protection in accordance with PBP 2019:

Recommendation 1: At the commencement of building works and in perpetuity, the entirety of each proposed warehouse lot shall be maintained as an Asset Protection Zone. The APZ shall be established and maintained as an inner protection area as outlined within *Planning for Bushfire Protection 2019* and the NSW RFS document 'Standards for Asset Protection Zones'.

Recommendation 2: Fire hydrants are provided in accordance with Building Code of Australia E1.3, AS2419.1:2021, including the ring main requirements for large, isolated buildings and those identified in Section 9.

Recommendation 3: Proposed new buildings are to be constructed to comply with the National Construction Code (2019), Australian Standard AS 3959:2018, *Construction of buildings in bush fire-prone areas* and/or NASH Standard (1.7.14 updated), *National Standard Steel Framed Construction in Bushfire Areas – 2014*, and Section 7.5 of *Planning for Bush Fire Protection 2019* on a prescriptive (deemed to satisfy and/or acceptable solution) basis and/or performance basis to the extent identified in Figure 6.

Recommendation 4: All proposed roads must comply with section 5.3.2 of *Planning for Bush Fire Protection 2019* as appropriate.

12. Conclusion

The Bushfire Hazard Assessment to support a State Significant Development (SSD) application for the proposed a Concept Masterplan across the Elizabeth Enterprise site.

The site is on bushfire prone land. Commercial and industrial development is designated as “other” development in PBP 2019. As “other” development, the proposed development has considerable flexibility, and the nature of the development often results in the structures providing a higher degree of bushfire resistance than that specified by PBP and AS3959.

The site is in a low-risk bushfire prone area and the proposed precincts can respond and implement an appropriate level of bushfire protection measures, as per PBP 2019.

This Report is a Bush Fire Hazard Assessment that demonstrates that an appropriate combination of protection measures has been provided to ensure the proposed development meets the aim and objectives, and the provisions of Section 8.3.1 and 8.3.10, of *Planning for Bush Fire Protection 2019*.



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Appendix 1: References

Australian Building Codes Board Building Code of Australia Volumes 1&2 Councils of Standards
Australia AS3959 (2018) – Australian Standard Construction of buildings in bushfire-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

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

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

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