

Bushfire Hazard Assessment

Project Silverback

Oakdale East Industrial Estate
2-10 Old Wallgrove Road, Horsley Park

Prepared for
Goodman Property Services (Aust) Pty Ltd

2 July 2026

Version V1.2



Document Tracking

Project Name:	Project Silverback
Prepared by:	Corey Shackleton
Client Details:	Luke Ridley Development Manager Goodman Property Services (Aust) Pty Ltd, 1-11 Hayes Road, Rosebery NSW 2018 Luke.Ridley@goodman.com
Project Address	2-10 Old Wallgrove Road, Horsley Park
Project Number	J4414

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

Version	Primary Author(s)	Description	Date Completed
0.1	Corey Shackleton	DRAFT	12 May 2026
0.2	Corey Shackleton	DRAFT	13 May 2026
0.3	Corey Shackleton	DRAFT	26 May 2026
1.0	Corey Shackleton	FINAL	27 May 2026
1.1	Corey Shackleton	FINAL (updated plans)	28 May 2026
1.2	Corey Shackleton	FINAL (updated plans)	2 July 2026



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



Disclaimer

Blackash Bushfire Pty Ltd has prepared this document in good faith based on the information provided to it and has endeavored to ensure that the information in this document is correct. However, many factors outside the current knowledge or control of Blackash affect the recipient's needs and project plans. Blackash does not warrant or represent that the document is free from error or omissions and does not accept liability for any errors or omissions. The scope of services was defined in consultation with the client by time and budgetary constraints imposed by the client and the availability of reports and other data on the subject area. Changes to available information, legislation and schedules are made on an on-going basis and readers should obtain up-to-date information. To the fullest extent possible Blackash expressly excludes any express or implied warranty as to condition, fitness, merchantability or suitability of this document and limits its liability for direct or consequential loss at the option of Blackash to re-supply the document or the cost of correcting the document. In no event shall responses to questions or any other information in this document be deemed to be incorporated into any legally binding agreement without the express written consent of an officer of Blackash. The information in this document is proprietary, confidential and unpublished work and is provided upon the recipient's promise to keep such information confidential and for the sole purpose of the recipient evaluating products / services provided by Blackash. In no event may this information be supplied to third parties without written consent from Blackash.

Contents

Executive Summary	4
1. Introduction	6
1.1. Site Context	6
1.2. Proposed Development	7
2. Legislative Framework	12
2.1. Bushfire Prone Land Mapping	12
2.2. Planning for Bushfire Protection 2019	14
2.2.1. General Objectives of Planning for Bushfire Protection	14
2.2.2. Application to Warehouse and Distribution Development	14
2.2.3. Other Development	15
2.2.4. SEARs, Concept Approval and Project Context	15
3. Bushfire Threat Assessment	17
3.1. Methodology	17
3.2. Bushfire Hazard	17
3.2.1. Fire Weather	17
3.2.2. Vegetation Assessment	18
3.2.3. Slopes Influencing Bushfire Behaviour	18
4. Bushfire Protection Measures	20
4.1. Asset Protection Zones	20
4.1.1. Radiant Heat Modelling	21
4.2. Bushfire Attack Levels	23
4.3. Water Supplies	23
4.4. Gas and electrical supplies	23
4.5. Access	24
4.6. Emergency Management Arrangements	26
5. Assessment Against the Aim and Objective of PBP	27
6. Assessment Against SEARs & Agency Advice	28
7. Recommendations	29
8. Conclusion	30
Appendix 1: References	31
Appendix 2: Radiant Heat Modelling	32

Executive Summary

This Bushfire Assessment has been prepared by Blackash Bushfire Consulting to support Project Silverback at the Oakdale East Industrial Estate, 2-10 Old Wallgrove Road, Horsley Park. The site is legally described as Lot 109 DP1293112 and is located within the Fairfield Local Government Area.

This report has been prepared to address the Planning Secretary's Environmental Assessment Requirements for SSD-120888992, including Item 22 - Bush Fire Risk. The report also addresses the Concept Plan Amendments (Mod 6) to State Significant Development Application SSD-37486043, to the extent relevant to bushfire risk.

The proposed development comprises the construction, fit-out and operation of two warehouse buildings, being Building 2A and Building 2B, together with Lot 2C and associated internal estate infrastructure. The development forms part of the broader Oakdale East Industrial Estate and is associated with amendments to the approved masterplan and subdivision layout, consolidation of Precincts 2, 4 and 5, amendments to Stage 2 infrastructure, revised development controls and allowance for 36.5 metre B-triple vehicle access.

The proposal comprises warehouse and distribution development and has been assessed having regard to the relevant provisions of *Planning for Bush Fire Protection 2019* for Class 5-8 buildings, including separation from hazard, defensible space, emergency access, firefighting water supply, services and ongoing management.

The site is identified as bush fire prone land. The relevant bushfire hazard for the proposed development is the eastern vegetation interface, which has been assessed as Forested Wetland with a level effective slope. Land to the north, south and west of the proposed development is generally associated with managed industrial estate land, existing or proposed roads, hardstand, cleared land, maintained verges, infrastructure corridors or other managed areas, and does not present a material bushfire hazard where maintained in a low fuel condition.

The APZ assessment identifies a required eastern APZ of 5-7 metres, with more than 40 metres provided. Detailed radiant heat and flame length modelling has also been undertaken for the eastern elevation. The modelling identifies a flame length of approximately 5.008 metres and informs the BAL / construction response shown in Figure 7.

The proposed development is supportable from a bushfire perspective, subject to implementation of the following bushfire protection measures:

- the APZ shown in Figure 6 is to be maintained in accordance with *Planning for Bush Fire Protection 2019* and the NSW RFS document *Standards for Asset Protection Zones*;

- proposed roads are to comply with section 5.3.2 of Planning for Bush Fire Protection 2019, as appropriate;
- firefighting water supply and hydrant coverage are to be provided in accordance with AS 2419, the NCC, fire engineering requirements, civil/services documentation and the relevant provisions of Planning for Bush Fire Protection 2019; and
- the proposed warehouses are to comply with the National Construction Code, AS 3959-2018 Construction of buildings in bushfire-prone areas and/or the NASH Standard, and Section 7.5 of Planning for Bush Fire Protection 2019 to the extent shown in Figure 7..

In the author's professional opinion, subject to implementation of the recommendations in this report, the proposed development satisfies the relevant aim and objectives of *Planning for Bush Fire Protection 2019* and provides an appropriate bushfire protection outcome for the proposed warehouse and distribution development.

1. Introduction

Blackash Bushfire Consulting has been engaged to assess the proposed Project Silverback development at Oakdale East Industrial Estate, 2-10 Old Wallgrove Road, Horsley Park. The site is legally described as Lot 109 DP1293112 and is located within the Fairfield Local Government Area (see Figure 1).

This Bushfire Hazard Assessment has been prepared by Blackash Bushfire Consulting to address the following Development Applications:

- Concept Plan Amendments (Mod 6): Amendments to State Significant Development Application 37486043 (as modified) in accordance with Section 4.24 of the *Environmental Planning & Assessment Act 1979*
- Detailed Application (Proposed Works): State Significant Development Application (SSDA) No. 120888992 based on Industry-specific Secretary's Environmental Assessment Requirements (SEARs) received dated 8 May 2026.

The proposed development is being undertaken by Goodman Property Services (Aust) Pty Ltd (Applicant) on behalf of BGMG 14 Pty Ltd (ACN 661 888 884) as trustee of BGMG 1 Oakdale East Trust No.2 (Owner). The development is located at 2-10 Old Wallgrove Road, Horsley Park (the Site). The folio identifier number is Lot 109 of Deposited Plan 1293112.

1.1. Site Context

The site is located at 2-10 Old Wallgrove Road, Horsley Park, within the Fairfield Local Government Area. The land forms part of the broader Oakdale East Industrial Estate.

The masterplan identifies a total site area of approximately 879,527 m², comprising developable precincts, internal estate roads, basins, easements, access driveway areas and non-developable land. The proposed development is focused on the revised Precinct 2 / Lot 2C area and forms part of the broader estate structure.

The site is affected by previous and ongoing estate planning and infrastructure approvals, including the Oakdale East Concept and Stage 2 approval SSD-37486043 and Fairfield City Council DA 347.1/2021 for rehabilitation works. The current application seeks to facilitate the revised industrial estate layout and detailed warehouse development for Project Silverback.

The site context relevant to bushfire includes the proposed warehouse buildings, hardstand areas, loading areas, internal road network, stormwater basins, landscaped areas, non-developable land and adjoining land. These areas must be considered in combination when determining vegetation classification, effective slope, defendable space, access, firefighting water supply and ongoing management requirements.

1.2. Proposed Development

The below further outlines the respective works the Development Applications seek approval for.

Concept Plan Amendments | State Significant Development Application SSD - 37486043 (Mod 6)

As part of the proposed works under SSD 120888992, the following amendments are proposed to the Concept Plan and Stage 1 Infrastructure works approved under SSDA 37486043:

- Amendment to approved Masterplan and Subdivision plan to accommodate revised Precinct 2-5 layout which will consolidate Precincts 2, 4 and 5, resulting in a total of three (3) precincts. (Precinct 1, 2 & 3).
- Amendment of Stage 2 infrastructure scope to accommodate revised and consolidated Precinct 2-5 layout
- Amendment of Development Controls, including those prescribed under Condition A9 & A10 of the consent, specifically:
 - Building Height from 15m and To 25m (excluding rooftop plant, roof access stairs and solar)
 - Maximum GLA from 317,867 sqm and to 317,971 sqm
- Increase maximum permissible vehicle from a 30 m super B-double to a 36.5m B-triple (Condition D14).

This application, inclusive of the amendments to the Concept Plan under SSD 37486043, seeks to facilitate the development of Building 2A, 2B & Lot 2C and associated Internal infrastructure changes.

Detailed Application | State Significant Development Application SSD - 120888992

The SSDA seeks approval for the construction, fit-out, operation and use of 2 warehouse buildings and associated internal site infrastructure works to accommodate the proposed building layouts. Specifically, this includes:

Warehouses and Distribution Building – Building 2A

- 24/7 warehouse and distribution use
- Construction, operation, fit-out (warehouse racking and office fit-out) and use of approximately 18,110 sqm warehouse with ancillary office GLA. Proposed ridge height of 14.6m (excluding rooftop plant and solar).
- Includes hardstand, dock offices, loading bays, landscaping, electric vehicle charging, solar panels and signage.

Warehouses and Distribution Building – Building 2B & Lot 2C

- 24/7 warehouse and distribution use for an automated mail and parcel processing and sorting facility.
- Construction, operation, fit-out (office and warehouse) and use of approximately 142,157 sqm of warehouse and office GLA across two levels spanning a proposed ridge height of 25.0m (excluding rooftop plant, roof access stairs and solar).
- Warehouse fit-out includes automation and sortation equipment along with associated mezzanine structures.
- Building 2B will include hardstand, heavy rigid parking, guardhouses, dock offices, loading bays, landscaping, electric vehicle charging, goods collection lockers, solar panels six lithium-ion battery energy storage systems (BESS) external to the main warehouse building and fleet workshop, weighbridges, fleet workshop, dock temperature control with external units, emergency generators, refuelling bay, truck wash and signage.
- Dangerous goods (DGs) are proposed to be stored at the site, which are below the threshold quantities under Chapter 3 of the State Environmental Planning Policy (Resilience and Hazard) 2021
- Ground Improvements to Warehouse 2B building footprint (i.e. pilling), including a 200mm thick layer of Cement Treated Fine Crushed Rock (CTFCR) placed under the entire warehouse footprint.

Internal Estate Infrastructure

- Bulk Earthworks to Precinct 2 (formally Precinct 2, 4 & 5)
 - Approximately 550,000m³ fill importation required as either virgin excavated natural material (VENM), excavated natural material (ENM) or Resource Recovery Order under Section 286A of the *Protection of the Environment Operations Act 1997* (PoEO Act 1997)
 - Importation proposed to be 24 hours, 7 days a week during the Fill Importation program
 - Export any unsuitable material (i.e Topsoil and clay)
- Retaining Walls (including importation of Engineered backfill)
- Stormwater Basin D (including fit-out)
- Construction and associated Easement to Drain of Stage 1 stormwater discharge line through Building 2B to Basin C
- Stage 1 road and servicing amendments to reflect revised Precinct 2, 4 & 5 building layout
- Noise barriers
- Lead-in services including additional 11kv feeder via the extension of HV feeders from existing Endeavour Energy switching stations within Roberts Road and Capicure Drive.

Other

- Expansion and on-going management of DA 347.1/2021 Containment Cell
- Subdivision of Precinct 2, 4 & 5 to suit revised precinct plan and ultimate lot layout



Legend

-  Watercourse
-  Subject Land



Date: 28/05/2026

0 125 250 500

Metres

Coordinate System: GDA 1994 MGA Zone 56

Imagery: © Nearmap

Figure 1: Site Location

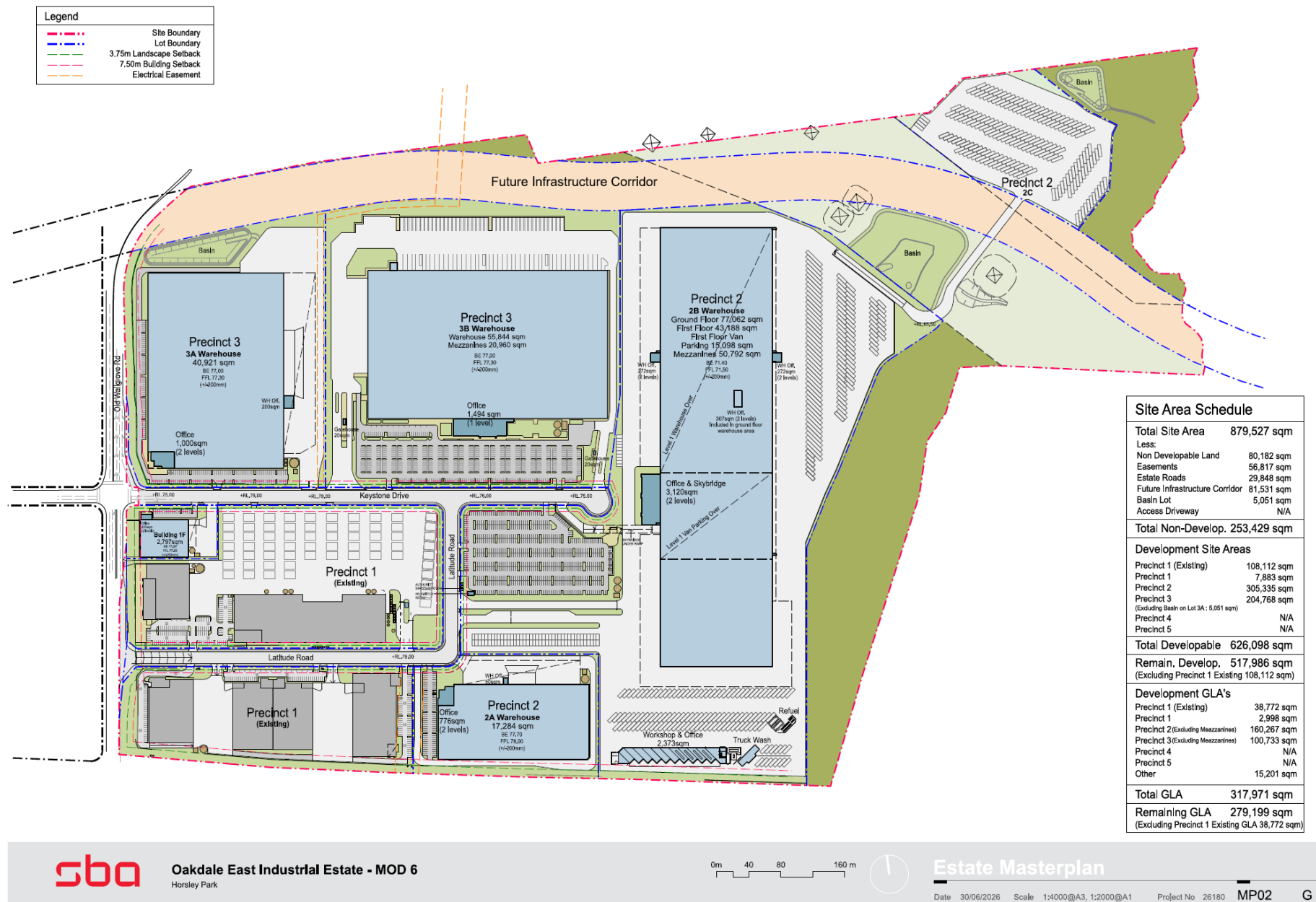


Figure 2: Proposed Development

2. Legislative Framework

The proposal is being progressed as State Significant Development SSD-120888992. The Planning Secretary's Environmental Assessment Requirements issued by the NSW Department of Planning, Housing and Infrastructure require bushfire risk to be addressed where the development is on mapped bush fire prone land, or where a bush fire threat is identified on or adjoining the site.

The relevant SEARs requirement is Item 22 - Bush Fire Risk, which requires a bush fire assessment that details the proposed bushfire protection measures and demonstrates compliance with Planning for Bush Fire Protection.

The development is also associated with amendments to the approved Oakdale East Concept and Stage 2 approval SSD-37486043. The assessment has therefore considered the proposed warehouse development in the context of the broader estate masterplan, the internal estate road network, infrastructure staging, non-developable land, landscaping and ongoing estate management.

The proposed development is not Special Fire Protection Purpose development. It comprises warehouse and distribution uses with ancillary office and associated estate infrastructure. The bushfire assessment is therefore undertaken having regard to the relevant provisions of *Planning for Bush Fire Protection 2019* for Class 5-8 buildings and the broader aim and objectives of PBP 2019.

2.1. Bushfire Prone Land Mapping

Bush fire prone land mapping has been reviewed for the site and surrounding land for the purposes of Section 10.3 of the *Environmental Planning and Assessment Act 1979*.

The site is identified as bush fire prone land on the current certified bush fire prone land map (see Figure 3).

Where land is identified as bush fire prone, the mapping operates as a trigger for bushfire assessment and does not, of itself, determine the development outcome. The relevant assessment is based on the actual vegetation, effective slope, separation distances, site design, access, services and ongoing management arrangements.

For the purposes of this report, the bushfire assessment has considered both the mapped bush fire prone land status and the potential bushfire threat on or adjoining the site, including any retained vegetation, non-developable land, stormwater basin areas, landscape areas and adjoining unmanaged land. The vegetation and slope assessment is provided in Section 3.

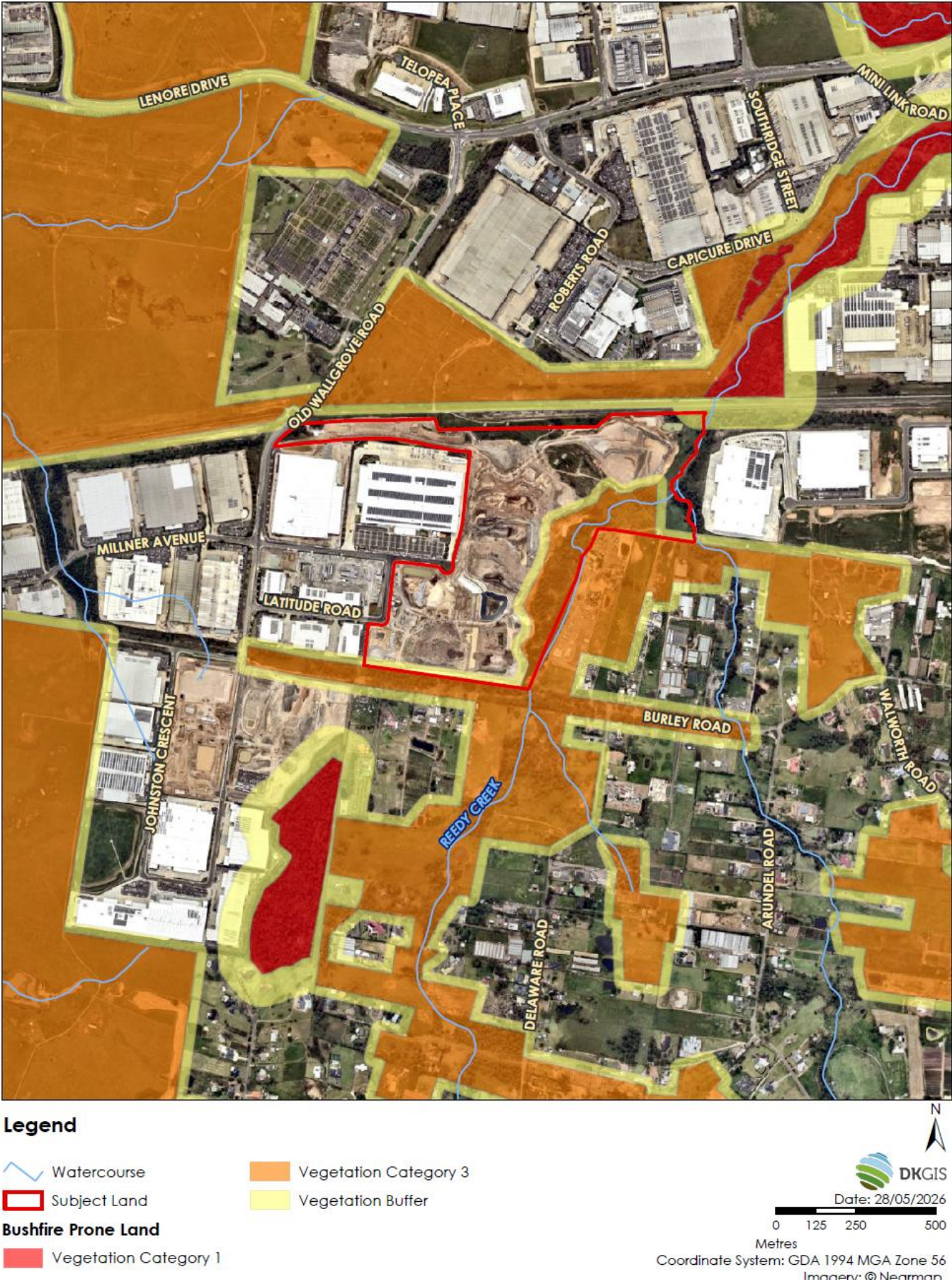


Figure 3: Bush Fire Prone Land Map

2.2. Planning for Bushfire Protection 2019

NSW RFS *Planning for Bush Fire Protection 2019* is the formal NSW guideline for planning, designing and building on bush fire prone land in NSW. PBP 2019 provides the relevant framework for assessing bushfire risk, including asset protection zones, construction response, access, services, landscaping, emergency management and ongoing management. For this development, the relevant assessment pathway is the application of the PBP 2019 aim and objectives and the provisions relevant to Class 5-8 industrial and warehouse buildings.

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

2.2.1. General Objectives of Planning for Bushfire Protection

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

- I. afford buildings and their occupants protection from exposure to a bush fire;*
- II. provide for a defendable space to be located around buildings;*
- III. provide appropriate separation between a hazard and buildings which, in combination with other measures, prevent the likely fire spread to buildings;*
- IV. ensure that appropriate operational access and egress for emergency service personnel and occupants is available;*
- V. provide for ongoing management and maintenance of BPMs; and*
- VI. ensure that utility services are adequate to meet the needs of firefighters.*

2.2.2. Application to Warehouse and Distribution Development

The proposed development comprises warehouse and distribution uses, ancillary office areas and associated estate infrastructure. It is not Special Fire Protection Purpose development.

For Class 5-8 buildings, *Planning for Bush Fire Protection 2019* requires a practical and risk-based assessment having regard to the nature of the use, the bushfire hazard, the ability to provide defendable space, emergency service access, firefighting water supply, utility services, landscaping and emergency management arrangements.

The bushfire strategy for the proposed development is therefore based on:

- I. providing appropriate separation between buildings and any classified bushfire hazard;
- II. maintaining defensible space and managed land around buildings, loading areas, hardstand areas and emergency access routes;
- III. ensuring the internal estate road network supports safe access for emergency services and safe egress for occupants;
- IV. providing firefighting water supply and hydrant coverage in accordance with the relevant standards;
- V. managing landscaping, basins, non-developable land and retained vegetation so that they do not create unacceptable fuel loads adjacent to buildings or access routes; and
- VI. incorporating bushfire response procedures into the construction and operational emergency management framework for the estate.

2.2.3. Other Development

The proposed warehouse and distribution buildings are assessed as “other development” for the purposes of *Planning for Bush Fire Protection 2019*. The development does not include residential accommodation, tourist accommodation, seniors housing, childcare, schools, hospitals or other Special Fire Protection Purpose uses.

The assessment has therefore adopted a proportionate approach that considers the low-risk industrial estate context, the proposed building setbacks, hardstand areas, internal estate roads, managed landscape areas, firefighting water supply, emergency access and ongoing estate management. Where required, additional construction or radiant heat mitigation measures may be applied to specific exposed elevations or interfaces following confirmation of the final vegetation, slope and setback inputs.

2.2.4. SEARs, Concept Approval and Project Context

This report responds to the Planning Secretary's Environmental Assessment Requirements for SSD-120888992. The Detailed Application is a State Significant Development Application based on Industry-specific Secretary's Environmental Assessment Requirements received dated 8 May 2026.

The report also addresses Concept Plan Amendments (Mod 6), being amendments to State Significant Development Application 37486043 (as modified) in accordance with Section 4.24 of the *Environmental Planning & Assessment Act 1979*.

Item 22 of the industry-specific SEARs requires a bush fire assessment where the development is on mapped bush fire prone land, or where a bush fire threat is identified on or adjoining the site. The assessment must detail the proposed bushfire protection measures and demonstrate compliance with *Planning for Bush Fire Protection*.

The proposed development is being undertaken by Goodman Property Services (Aust) Pty Ltd (Applicant) on behalf of BGMG 14 Pty Ltd (ACN 661 888 884) as trustee of BGMG 1 Oakdale East Trust No.2 (Owner). The development is located at 2-10 Old Wallgrove Road, Horsley Park, being Lot 109 of Deposited Plan 1293112.

The Department's cover letter also identifies additional assessment requirements relating to previous consents, consistency with the approved Oakdale East Concept and Stage 2 approval SSD-37486043, and how the relevant conditions for future development applications have been addressed. This report addresses those matters to the extent relevant to bushfire risk, including the relationship between the proposed development, the approved estate structure, internal infrastructure, access, landscaping and ongoing management.

3. Bushfire Threat Assessment

3.1. Methodology

PBP 2019 provides the methodology for determining bushfire threat and the commensurate bushfire protection measures required for development on bush fire prone land or where a bushfire threat is identified. The key assessment inputs are the vegetation formation, effective slope, separation distance, proposed building use, access, services and ongoing management.

This assessment has been prepared to address the bush fire risk requirements of the SEARs issued for SSD-120888992 and has regard to:

- *Planning for Bush Fire Protection 2019*;
- the *Rural Fires Act 1997*;
- the *Environmental Planning and Assessment Act 1979*;
- the current bush fire prone land mapping for Fairfield City;
- the Project Silverback SEARs issued on 8 May 2026;
- the Oakdale East Industrial Estate masterplan;
- the proposed warehouse and distribution development, internal estate infrastructure, hardstand areas, loading areas, stormwater infrastructure, landscape areas and non-developable land; and
- aerial mapping, GIS analysis and site-specific vegetation and slope assessment.

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

3.2. Bushfire Hazard

An assessment of the bushfire hazard is necessary to determine the appropriate bushfire protection measures for the proposed development. The vegetation formations and effective slope around the site have been assessed in accordance with PBP 2019.

The assessment considers vegetation within 140 metres of the proposed development and effective slope within 100 metres of the proposed development. Particular attention has been given to retained vegetation, non-developable land, stormwater basin areas, landscape areas, adjoining land and any temporary unmanaged grass or vegetation conditions that may occur during estate development and staging.

3.2.1. Fire Weather

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

3.2.2. Vegetation Assessment

The Rural Fires Regulation requires a classification of vegetation on and surrounding the site out to 140 metres from the development footprint in accordance with the vegetation classification system in *Planning for Bush Fire Protection 2019*.

The vegetation assessment has been undertaken having regard to the current site conditions, the approved and proposed Oakdale East Industrial Estate layout, the proposed warehouse buildings, internal estate roads, hardstand areas, stormwater infrastructure, landscape areas, non-developable land and adjoining land.

Land to the north, south and west of the proposed development is generally associated with managed industrial estate land, existing or proposed roads, hardstand, cleared land, maintained verges, infrastructure corridors or other managed areas. These areas do not present a material bushfire hazard where they are maintained in a low fuel condition.

The relevant bushfire hazard is located to the east of the proposed development and is associated with vegetation adjoining the eastern interface of the estate. This vegetation has been assessed as Forested Wetland. The eastern hazard has been considered in the APZ, radiant heat and construction response assessment in Section 4.

Any landscaped areas, stormwater basins, non-developable land and retained or revegetated areas within or adjoining the development are to be designed and managed so that they do not create unmanaged fuel loads adjacent to buildings, loading areas, emergency access routes or firefighting water supply infrastructure.

3.2.3. Slopes Influencing Bushfire Behaviour

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

The effective slope influencing bushfire behaviour has been assessed in accordance with *Planning for Bush Fire Protection 2019*. The effective slope is the slope of the ground under the classified vegetation and is distinct from the site slope between the vegetation and the building.

The relevant eastern hazard has been assessed as having a level effective slope for the purposes of the bushfire assessment and radiant heat modelling. This is reflected in the APZ and radiant heat modelling assessment in Section 4.



Legend

- Watercourse
- Contour - 2m
- Subject Land
- Lot

- Vegetation Management Plan**
- Passive management
 - Regeneration
 - Revegetation

- Vegetation Formation**
- Woodland
 - Grassland
 - Forested Wetlands



Date: 2/07/2026
0 25 50 100
Metres
Coordinate System: GDA 1994 MGA Zone 56
Imagery: © Neamap

Figure 4: Vegetation and slope map.

4. Bushfire Protection Measures

PBP 2019 recognises that bushfire protection measures work in combination and should respond to the nature of the development, the hazard, site context and occupant profile. For Project Silverback, the relevant bushfire protection measures have been considered having regard to the proposed warehouse and distribution buildings, ancillary office areas, hardstand, loading areas, internal estate roads, stormwater infrastructure, landscaping, non-developable land and ongoing estate management.

The bushfire protection measures work together to satisfy the aim and objectives of PBP 2019. The relevant measures include asset protection zones and defendable space, building construction response where required, firefighting water supply, services, emergency access, landscaping and emergency management.

Appropriate combinations depend upon geographic location and site circumstances.

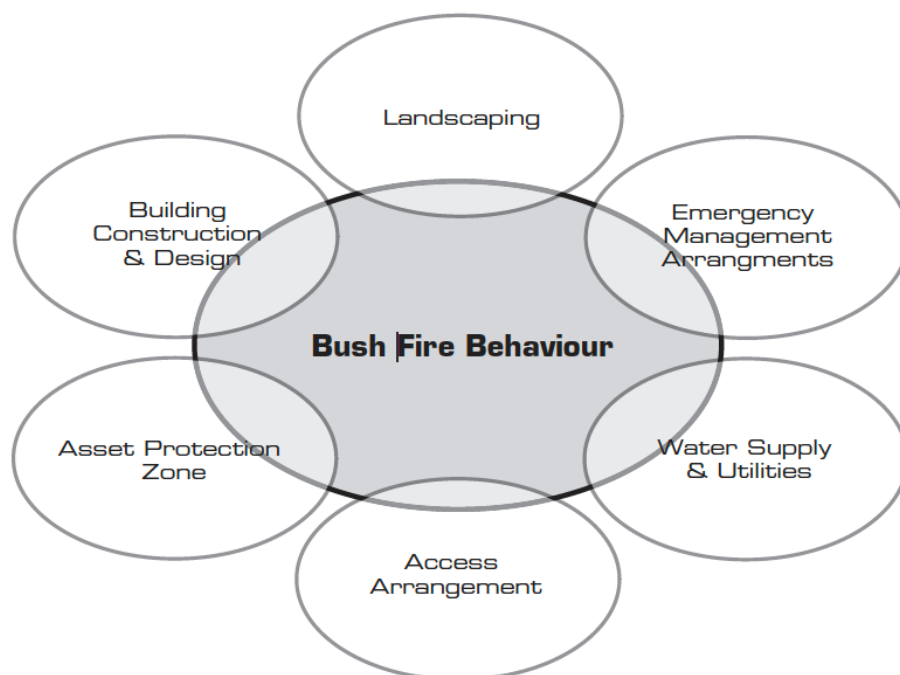


Figure 5: Bushfire Protection Measures in Combination (source PBP 2019 p. 26).

4.1. Asset Protection Zones

The APZ strategy for Project Silverback is to provide and maintain appropriate defendable space between the proposed warehouse buildings and any classified bushfire hazard.

The proposed development is located within a large industrial estate context, where the developable lots, internal roads, hardstand areas, loading areas, maintained verges and managed landscape areas can provide substantial managed separation and defendable

space. However, APZs must be determined based on the final vegetation classification, effective slope and separation distance to the proposed buildings.

Required APZs are to be located within land that can be managed and maintained in perpetuity, including building setbacks, hardstand areas, internal estate roads, managed landscape areas and other maintained estate land. APZs should not rely on unmanaged non-developable land, retained vegetation, stormwater basins or adjoining land unless those areas are subject to an appropriate management mechanism.

Where stormwater basins, landscaping, retained vegetation or non-developable land adjoin the proposed warehouse buildings, those areas are to be designed and maintained so they do not compromise the required APZ or create unmanaged fuel loads adjacent to buildings, loading areas or emergency access routes.

Table 1 summarises the APZ assessment for the proposed development.

Table 1: APZ Assessment

Direction	Slope	Vegetation	Minimum APZ	APZ provided
North	NA	No hazard	Nil	NA
East	Level	Forested Wetland	5-7 metres*	>40 metres*
South	NA	No hazard	Nil	NA
West	NA	No hazard	Nil	NA

*Note: The eastern APZ / construction has been informed by site-specific radiant heat and flame length modelling. The modelling indicates a flame length of approximately 5.008 metres.

4.1.1. Radiant Heat Modelling

Detailed radiant heat modelling has been undertaken for the eastern elevation due to the site-specific inputs. Table 2 below is a summary of the key inputs, while the detailed outputs can be found in Appendix 2. This modelling underpins the BAL mapping for the site and is consistent with that undertaken within the *Bushfire Hazard Assessment for the Oakdale East Industrial Estate*, prepared by Blackash Bushfire Consulting, dated 23 March 2023.

Table 2: Modelling inputs for the Flame Zone width on the eastern elevation.

Direction	Slope	Vegetation	Separation	Short Fire Run	Radiant Heat	Flame Length
East	0°	Coastal Floodplain Forest	5 metres	80 metres	33.55kW/m2	5.008 metres



- ### Vegetation Management Plan
-  Passive management
 -  Regeneration
 -  Revegetation

- Vegetation Formation**
- Woodland
 - Grassland
 - Forested Wetlands

 **DKGIS**
Date: 2/07/2026

0 25 50 100

Metres

Coordinate System: GDA 1994 MGA Zone 56
Imagery: © Nearmap

22

4.2. Bushfire Attack Levels

Bushfire Attack Level assessment provides a measure of potential bushfire exposure from ember attack, radiant heat and direct flame contact. For Class 5-8 warehouse and distribution buildings, AS 3959 is not applied in the same prescriptive manner as for Class 1, 2 and 3 residential buildings. However, BAL and radiant heat assessment remain useful tools for informing separation, construction response and performance-based mitigation where a bushfire hazard is present.

The proposed development comprises large warehouse and distribution buildings with ancillary office areas, hardstand, loading areas and internal estate infrastructure. The primary bushfire mitigation strategy is to provide appropriate separation and defensible space through building setbacks, estate roads, hardstand areas, managed verges and maintained landscaped areas.

Where the final vegetation and slope assessment identifies a bushfire hazard capable of exposing a building elevation to elevated radiant heat or ember attack, a site-specific construction response may be required. This may include non-combustible external materials, ember protection to vulnerable openings, protection of exposed services, or other performance-based measures coordinated with the NCC, fire engineering and architectural documentation.

The BAL shown in Figure 7 has been informed by the site-specific eastern interface modelling in Section 4.1.1 and Appendix 2. If the final detailed design materially changes the building footprint, eastern setback, internal road alignment, APZ arrangement or vegetation management outcome, the BAL assessment and Figure 7 must be reviewed and updated.

4.3. Water Supplies

The proposed development is to be serviced by reticulated water supply as part of the Oakdale East Industrial Estate infrastructure.

Firefighting water supply and hydrant coverage are to be provided in accordance with AS 2419, the NCC, the fire engineering strategy, the civil/services documentation and the relevant provisions of PBP 2019. Hydrant locations, coverage and pressure/flow requirements are to be confirmed through the detailed services and fire engineering design.

Subject to confirmation of the final hydrant design and firefighting water supply arrangements, the proposal is capable of satisfying the water supply objectives of PBP 2019.

4.4. Gas and electrical supplies

Electrical services, solar infrastructure, electric vehicle charging, refuelling infrastructure and any gas or dangerous goods storage are to be designed, installed and maintained in accordance

with the relevant Australian Standards, NCC requirements, hazardous goods requirements, fire engineering requirements and operational management procedures.

Any gas services are to be installed and maintained in accordance with AS/NZS 1596, where applicable. Electrical transmission lines, substations, solar infrastructure and other exposed services are to be located and managed so that they do not create unacceptable ignition or operational risks during a bushfire event.

Subject to detailed design, the proposed utility arrangements are capable of satisfying the utility service objectives of PBP 2019.

4.5. Access

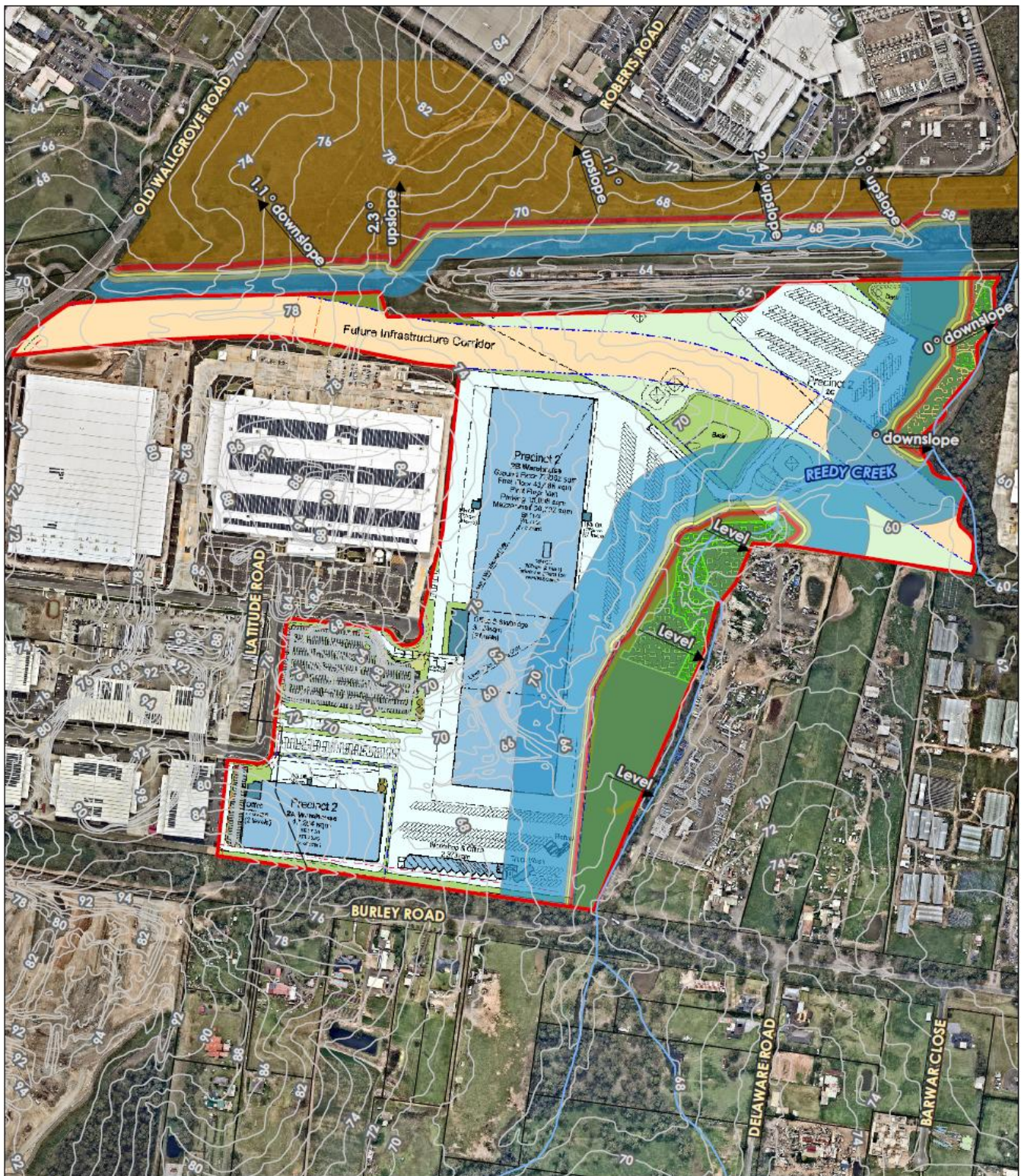
The proposed development forms part of the Oakdale East Industrial Estate and is serviced by the estate road network, including access from Old Wallgrove Road and internal roads serving the warehouse buildings, hardstand areas, loading docks, guardhouses, parking areas and service areas.

The Concept Plan amendments include an increase in the maximum permissible vehicle from a 30 metre super B-double to a 36.5 metre B-triple. The internal road and hardstand network is therefore being designed for significant heavy vehicle access and circulation. This provides a strong basis for emergency service access, subject to detailed civil, traffic and fire engineering coordination.

Emergency access is to be maintained to the warehouse buildings, loading areas, hardstand areas, hydrants, fire services infrastructure and any required APZs or defendable spaces. Internal roads and hardstand areas are to be designed and managed to avoid obstruction by parked vehicles, loading activities, security infrastructure, gates or operational controls.

During construction and staging, temporary emergency access is to be maintained to active work areas, completed buildings, firefighting water supply points and evacuation routes.

Subject to final civil, traffic and fire engineering design, the access arrangements are capable of satisfying the access objectives of PBP 2019.



Legend

- Watercourse
- Contour - 2m
- Subject Land
- Lot

Vegetation Management Plan

- Passive management

- Regeneration
- Revegetation
- Vegetation Formation**
- Woodland
- Grassland
- Forested Wetlands

Bushfire Attack Level (BAL)

- BAL - Flame Zone
- BAL - 40
- BAL - 29
- BAL - 19

BAL - 12.5



Date: 2/07/2026

0 25 50 100

Metres

Coordinate System: GDA 1994 MGA Zone 56

Imagery: © Nearmap

Figure 7: Bushfire Attack Levels.

4.6. Emergency Management Arrangements

A standalone *Bush Fire Emergency Management and Evacuation Plan* is not considered necessary at the SSDA assessment stage, subject to confirmation of the final bushfire hazard assessment and implementation of the bushfire protection measures identified in this report.

However, bushfire response procedures should be incorporated into the construction and operational emergency management framework for the development. These procedures should address:

- site monitoring during elevated fire danger periods;
- management of temporary fuel loads during construction and staging;
- maintenance of emergency access and firefighting water supply;
- staff and contractor induction requirements;
- evacuation and shelter procedures where relevant;
- coordination with estate management and emergency services; and
- specific procedures for 24/7 warehouse and distribution operations.

The emergency management procedures are to be reviewed prior to occupation and updated as required to reflect the final building layout, workforce numbers, access arrangements, operational procedures and estate management arrangements.

5. Assessment Against the Aim and Objective of PBP

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

Table 3 shows the compliance with PBP.

Table 3: Compliance with Aim & Objectives of PBP.

Aim	Comment	Meets Criteria
The aim of PBP is to use the NSW development assessment system to provide for the protection of human life (including fire fighters) and to minimise impacts on property from the threat of bushfire, while having due regard to development potential, onsite amenity and the protection of the environment.	The proposed warehouse and distribution development incorporates appropriate bushfire protection measures, including managed separation, defendable space, emergency access, firefighting water supply, services, landscaping controls and operational management. Subject to implementation of the recommendations in this report, the proposal satisfies the aim of PBP 2019.	
Objectives	Comment	Meets Criteria
Afford occupants of any building adequate protection from exposure to a bushfire.	Buildings are to be separated from classified bushfire hazards by managed land, hardstand, estate roads, landscape setbacks and APZs where required.	
Provide for a defendable space to be located around buildings.	Defendable space is provided through building setbacks, hardstand areas, internal estate roads, maintained verges and managed landscape areas. Required APZs are to be maintained in accordance with PBP 2019 and NSW RFS APZ standards.	
Provide appropriate separation between a hazard and buildings, which, in combination with other measures, prevent the likely fire spread to buildings.	Separation is to be confirmed through the final APZ plan. APZs are to be located within land capable of ongoing management and must not rely on unmanaged vegetation, basins or adjoining land unless an appropriate management mechanism is in place.	
Ensure that safe operational access and egress for emergency service personnel and occupants is available.	The estate road and hardstand network provides a strong basis for emergency service access and occupant egress.	
Provide for ongoing management and maintenance of bushfire protection measures.	APZs, managed land, landscaped areas, basins and non-developable land are to be managed through estate management, landscape maintenance and operational procedures.	
Ensure that utility services are adequate to meet the needs of firefighters.	Reticulated water, hydrants, fire services, electrical services, solar, EV charging, refuelling and any gas/dangerous goods interfaces are to be designed and managed in accordance with the relevant standards and fire safety documentation.	

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.

6. Assessment Against SEARs & Agency Advice

This report has been prepared in response to the Planning Secretary's Environmental Assessment Requirements issued by the NSW Department of Planning, Housing and Infrastructure for SSD-120888992, Project Silverback Oakdale East Industrial Estate. The report addresses the Detailed Application for SSDA No. 120888992 and the Concept Plan Amendments (Mod 6) to State Significant Development Application 37486043, to the extent relevant to bushfire risk.

The relevant bushfire requirement is Item 22 - Bush Fire Risk. Item 22 requires a bush fire assessment where the development is on mapped bush fire prone land, or where a bush fire threat is identified on or adjoining the site. The assessment must detail the proposed bushfire protection measures and demonstrate compliance with Planning for Bush Fire Protection.

The Department's cover letter also identifies additional assessment requirements relating to previous consents, consistency with the approved Oakdale East Concept and Stage 2 approval SSD-37486043, and how the relevant conditions for future development applications have been addressed. This report addresses those matters to the extent relevant to bushfire risk, including the relationship between the proposed warehouse development, the approved estate structure, internal infrastructure, access, landscaping, non-developable land and ongoing estate management.

Table 4 provides a summary of the response to the relevant SEARs requirements.

Table 4: Compliance with SEARs & Agency Advice.

General Requirements	Comment	Complies
SEARs Item 22 - Bush Fire Risk	This report provides a bush fire assessment for Project Silverback and details the proposed bushfire protection measures. The assessment considers the proposed warehouse and distribution buildings, internal estate roads, hardstand areas, landscaping, stormwater infrastructure, non-developable land and adjoining vegetation.	
Concept Plan Amendments (Mod 6)	The report has considered the proposed amendments to SSD-37486043, including the revised Precinct 2-5 layout, consolidation into three precincts, Stage 2 infrastructure amendments, revised development controls and increase in maximum permissible vehicle from a 30 m super B-double to a 36.5 m B-triple, to the extent relevant to bushfire risk, access, APZs, defendable space and estate management.	
Detailed Application SSDA No. 120888992	The report has considered the construction, fit-out and operation of Building 2A, Building 2B and Lot 2C, together with associated internal estate infrastructure works, including hardstand, loading areas, stormwater infrastructure, landscaping, estate roads, dangerous goods below threshold quantities, bulk earthworks, fill importation, retaining walls, Basin D, stormwater discharge infrastructure, road and servicing amendments, noise barriers, containment cell works and subdivision.	
Related Applications / DA 347.1/2021	The report has considered the relationship between the proposed SSDA works and Fairfield City Council DA 347.1/2021, to the extent relevant to bushfire risk, including bulk earthworks, rehabilitation works, finished estate levels, containment cell works and the construction-stage management of temporary fuel loads, access and staging.	

7. Recommendations

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

Recommendation 1: The APZ shown in Figure 6 is to be maintained in accordance with *Planning for Bush Fire Protection 2019* and the NSW RFS document Standards for Asset Protection Zones.

Recommendation 2: All proposed roads must comply with section 5.3.2 of *Planning for Bush Fire Protection 2019* as appropriate.

Recommendation 3: Firefighting water supply and hydrant coverage are to be provided in accordance with AS 2419, the NCC, fire engineering requirements, civil/services documentation and the relevant provisions of *Planning for Bush Fire Protection 2019*.

Recommendation 4: The proposed warehouses are to comply with the National Construction Code, AS 3959-2018 Construction of buildings in bushfire-prone areas and/or the NASH Standard, and Section 7.5 of *Planning for Bush Fire Protection 2019* to the extent shown in Figure 7.

8. Conclusion

This assessment has considered the proposed Project Silverback development at Oakdale East Industrial Estate, 2-10 Old Wallgrove Road, Horsley Park. The proposal comprises warehouse and distribution development, ancillary office areas and associated estate infrastructure within Lot 109 DP1293112.

The assessment has been prepared to respond to the Planning Secretary's Environmental Assessment Requirements for SSD-120888992, including Item 22 - Bush Fire Risk. The report also considers the proposal in the context of the broader Oakdale East Industrial Estate and the associated amendments to the approved Concept and Stage 2 approval SSD-37486043.

The relevant bushfire hazard for the proposed development is the eastern vegetation interface identified in this report. The proposed development incorporates managed separation, APZ / defensible space, radiant heat and flame length assessment, BAL / construction response, firefighting water supply, emergency access, utility management, landscaping controls and construction / operational management measures.

In the author's professional opinion, subject to implementation of the recommendations in this report, the proposed development satisfies the relevant aim and objectives of *Planning for Bush Fire Protection 2019* and provides an appropriate bushfire protection outcome for the proposed warehouse and distribution development. The proposal is therefore suitable for assessment as part of the current State Significant Development application.



Corey Shackleton | Principal Bushfire & Resilience

Blackash Bushfire Consulting

B.Sc., Grad. Dip. (Design for Bushfire Prone Areas)

Fire Protection Association of Australia BPAD Level 3 - 34603



Appendix 1: References

Goodman / Brickworks / SBA Architects (2026) Oakdale East Industrial Estate Mod 6 Estate Masterplan, Drawing MP02, Revision B.

NSW Department of Planning, Housing and Infrastructure (2026) Planning Secretary's Environmental Assessment Requirements, Project Silverback Oakdale East Industrial Estate, SSD-120888992.

NSW Department of Planning, Housing and Infrastructure (2026) Industry Specific SEARs, Warehouses and Distribution Centres, SSD-120888992.

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

NSW Government (1997) Rural Fires Act 1997.

NSW Government (2021) State Environmental Planning Policy (Resilience and Hazards) 2021.

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

NSW Rural Fire Service (2019) Planning for Bush Fire Protection.

OEE Silverback SSDA - Report Standard Text and Inclusions - Final.

Standards Australia, AS 2419 Fire Hydrant Installations.

Standards Australia, AS/NZS 1596 The storage and handling of LP Gas, where relevant.

Appendix 2: Radiant Heat Modelling

Forest/Woodland - FDF & SFR Calculation page:

Fire run specifics:

Common and bushfire behaviour contributor inputs:

Predominant vegetation:

Surface & Elevated Fuel Load: tph Overall fuel load: tph

Average Canopy Height: Metres Fire weather district: FDI

Average elevated fuel height: Metres Flame temperature: Kelvin

Distance to vegetation: Metres Target elevation of receiver: Metres

Effective slope: Degrees Ambient temperature: Kelvin

Site slope: Degrees SFR fire run length: Metres

Minimum head width: Metres

Outputs - Fully Developed Fire (FDF) **Outputs - Developing Fire Run (DFR)**

Wind Speed: kph Wind speed: kph

Default elevation of receiver: Metres Default elevation of receiver: Metres

FDF Flame Angle: Degrees SFR Flame Angle: Degrees

FDF Flame Length: Metres SFR Flame Height: Metres

FDF Intensity: kW/m SFR Intensity: kW/m

FDF FROS: kph SFR FROS: kph

FDF Flame transmissivity: kW/m SFR Flame transmissivity: kW/m

FDF View Factor: SFR View Factor:

Calculated SFR Head Width: Metres

SFR fire run length: Metres

Approx. SFR travel time: min/sec

FDF Radiant Heat kW/m² **SFR Radiant Heat** kW/m²

☐ Input cells ☐ Locked output cells

Glossary of abbreviations/terms:

tph = tonnes per hectare
kW/m = Kilowatts per metre
kW/m² = Kilowatts per metre squared
HFD = Horizontal Flame Depth
LRV = Low Risk Vegetation

m/h = metres per hour
FROS = Forward rate of Spread
kph = kilometres per hour
FF = Plank Fire
SFR = Short Fire Run

K = Kelvin
min = minutes
sec = seconds
min/sec = minutes and seconds

East: BAL-40

Forest/Woodland - FDF & SFR Calculation page:

Fire run specifics:

Common and bushfire behaviour contributor inputs:

Predominant vegetation:

Surface & Elevated Fuel Load: tph Overall fuel load: tph

Average Canopy Height: Metres Fire weather district: FDI

Average elevated fuel height: Metres Flame temperature: Kelvin

Distance to vegetation: Metres Target elevation of receiver: Metres

Effective slope: Degrees Ambient temperature: Kelvin

Site slope: Degrees SFR fire run length: Metres

Minimum head width: Metres

Outputs - Fully Developed Fire (FDF) **Outputs - Developing Fire Run (DFR)**

Wind Speed: kph Wind speed: kph

Default elevation of receiver: Metres Default elevation of receiver: Metres

FDF Flame Angle: Degrees SFR Flame Angle: Degrees

FDF Flame Length: Metres SFR Flame Height: Metres

FDF Intensity: kW/m SFR Intensity: kW/m

FDF FROS: kph SFR FROS: kph

FDF Flame transmissivity: kW/m SFR Flame transmissivity: kW/m

FDF View Factor: SFR View Factor:

Calculated SFR Head Width: Metres

SFR fire run length: Metres

Approx. SFR travel time: min/sec

FDF Radiant Heat kW/m² **SFR Radiant Heat** kW/m²

☐ Input cells ☐ Locked output cells

Glossary of abbreviations/terms:

tph = tonnes per hectare
kW/m = Kilowatts per metre
kW/m² = Kilowatts per metre squared
HFD = Horizontal Flame Depth
LRV = Low Risk Vegetation

m/h = metres per hour
FROS = Forward rate of Spread
kph = kilometres per hour
FF = Plank Fire
SFR = Short Fire Run

K = Kelvin
min = minutes
sec = seconds
min/sec = minutes and seconds

East: BAL-29

Forest/Woodland - FDF & SFR Calculation page:

Fire run specifics:

Common and bushfire behaviour contributor inputs:

Predominant vegetation:

Surface & Elevated Fuel Load: tph Overall fuel load: tph

Average Canopy Height: Metres Fire weather district: FDI

Average elevated fuel height: Metres Flame temperature: Kelvin

Distance to vegetation: Metres Target elevation of receiver: Metres

Effective slope: Degrees Ambient temperature: Kelvin

Site slope: Degrees SFR fire run length: Metres

Minimum head width: Metres

Outputs - Fully Developed Fire (FDF) **Outputs - Developing Fire Run (DFR)**

Wind Speed: kph Wind speed: kph

Default elevation of receiver: Metres Default elevation of receiver: Metres

FDF Flame Angle: Degrees SFR Flame Angle: Degrees

FDF Flame Length: Metres SFR Flame Height: Metres

FDF Intensity: kW/m SFR Intensity: kW/m

FDF FROS: kph SFR FROS: kph

FDF Flame transmissivity: kW/m SFR Flame transmissivity: kW/m

FDF View Factor: SFR View Factor:

Calculated SFR Head Width: Metres

SFR fire run length: Metres

Approx. SFR travel time: min/sec

FDF Radiant Heat kW/m² **SFR Radiant Heat** kW/m²

☐ Input cells ☐ Locked output cells

Glossary of abbreviations/terms:

tph = tonnes per hectare
kW/m = Kilowatts per metre
kW/m² = Kilowatts per metre squared
HFD = Horizontal Flame Depth
LRV = Low Risk Vegetation

m/h = metres per hour
FROS = Forward rate of Spread
kph = kilometres per hour
FF = Plank Fire
SFR = Short Fire Run

K = Kelvin
min = minutes
sec = seconds
min/sec = minutes and seconds

East: BAL-19

Forest/Woodland - FDF & SFR Calculation page:

Fire run specifics:

Common and bushfire behaviour contributor inputs:

Predominant vegetation:

Surface & Elevated Fuel Load: tph Overall fuel load: tph

Average Canopy Height: Metres Fire weather district: FDI

Average elevated fuel height: Metres Flame temperature: Kelvin

Distance to vegetation: Metres Target elevation of receiver: Metres

Effective slope: Degrees Ambient temperature: Kelvin

Site slope: Degrees SFR fire run length: Metres

Minimum head width: Metres

Outputs - Fully Developed Fire (FDF) **Outputs - Developing Fire Run (DFR)**

Wind Speed: kph Wind speed: kph

Default elevation of receiver: Metres Default elevation of receiver: Metres

FDF Flame Angle: Degrees SFR Flame Angle: Degrees

FDF Flame Length: Metres SFR Flame Height: Metres

FDF Intensity: kW/m SFR Intensity: kW/m

FDF FROS: kph SFR FROS: kph

FDF Flame transmissivity: kW/m SFR Flame transmissivity: kW/m

FDF View Factor: SFR View Factor:

Calculated SFR Head Width: Metres

SFR fire run length: Metres

Approx. SFR travel time: min/sec

FDF Radiant Heat kW/m² **SFR Radiant Heat** kW/m²

☐ Input cells ☐ Locked output cells

Glossary of abbreviations/terms:

tph = tonnes per hectare
kW/m = Kilowatts per metre
kW/m² = Kilowatts per metre squared
HFD = Horizontal Flame Depth
LRV = Low Risk Vegetation

m/h = metres per hour
FROS = Forward rate of Spread
kph = kilometres per hour
FF = Plank Fire
SFR = Short Fire Run

K = Kelvin
min = minutes
sec = seconds
min/sec = minutes and seconds

East: BAL-12.5