

Metro Outer Development Assessment Panel Agenda

Meeting Date and Time: Meeting Number: Meeting Venue: Public Observing: Thursday, 11 July 2024; 9:30am MODAP/24 140 William Street, Perth Online

A live stream will be available at the time of the meeting, via the following link: MODAP/24 – 11 July 2024 – Shire of Serpentine Jarrahdale – Shire of Waroona

PART A – INTRODUCTION

- 1. Opening of Meeting, Welcome and Acknowledgement
- 2. Apologies
- 3. Members on Leave of Absence
- 4. Noting of Minutes

PART B – SHIRE OF SERPENTINE JARRAHDALE

- 1. Declarations of Due Consideration
- 2. Disclosure of Interests
- 3. Form 1 DAP Applications
 - 3.1 Lot 631 (108) Lawrence Way, Byford Proposed Child Care Premises DAP/24/02678
- 4. Form 2 DAP Applications
- 5. Section 31 SAT Reconsiderations

PART C – SHIRE OF WAROONA

- 1. Declarations of Due Consideration
- 2. Disclosure of Interests
- 3. Form 1 DAP Applications
 - 3.1 Lot 702 on Deposited Plan 59305, Wagerup Proposed Battery Energy Storage System – DAP/23/02607
- 4. Form 2 DAP Applications
- 5. Section 31 SAT Reconsiderations

PART D – OTHER BUSINESS

- 1. State Administrative Tribunal Applications and Supreme Court Appeals
- 2. General Business
- 3. Meeting Closure

Please note, presentations for each item will be invited prior to the items noted on the agenda and the presentation details will be contained within the related information documentation



ATTENDANCE

DAP Members

Tony Arias (Presiding Member) Francesca Lefante (Deputy Presiding Member) Ian Birch (Specialist Member)

Part B – Shire of Serpentine Jarrahdale Cr Shaye Mack (Local Government Member, Shire of Serpentine Jarrahdale) Cr Tricia Duggin (Local Government Member, Shire of Serpentine Jarrahdale)

Part C – Shire of Waroona Cr Mike Walmsley (Local Government Member, Shire of Waroona) Cr Naomi Purcell (Local Government Member, Shire of Waroona)

Minute Secretary

Claire Ortlepp (DAP Secretariat)

Officers in Attendance

Zoe Hendry (DAP Secretariat)



PART A – INTRODUCTION

1. Opening of Meeting, Welcome and Acknowledgement

The Presiding Member declares the meeting open and acknowledges the traditional owners and pay respects to Elders past and present of the land on which the meeting is being held.

This meeting is being recorded and livestreamed on the DAP website in accordance with regulation 40(2A) of the *Planning and Development* (*Development Assessment Panels*) Regulations 2011. Members are reminded to announce their name and title prior to speaking.

2. Apologies

President Robert Coales (Local Government DAP Member, Shire of Serpentine Jarrahdale)

3. Members on Leave of Absence

Nil.

4. Noting of Minutes

Signed minutes of previous meetings are available on the <u>DAP website</u>.



PART B – SHIRE OF SERPENTINE JARRAHDALE

1. Declarations of Due Consideration

Any member who is not familiar with the substance of any report or other information provided for consideration at the DAP meeting must declare that fact before the meeting considers the matter.

2. Disclosure of Interests

Nil.

3. Form 1 DAP Applications

3.1 Lot 631 (108) Lawrence Way, Byford – Proposed Child Care Premises – DAP/24/02678

4. Form 2 DAP Applications

Nil.

5. Section 31 SAT Reconsiderations

Nil.

Part B – Item 3.1 – LOT 631, 108 LAWRENCE WAY, BYFORD - PROPOSED 'CHILD CARE PREMISES'

DAP Name:	Matra Outar Davalanmant Assassment	
DAF Name.	Metro Outer Development Assessment Panel	
Local Government Area:	Shire of Serpentine Jarrahdale	
Applicant:	Planning Solutions	
Owner:	Housing Authority	
Value of Development:	\$2.05mil	
Responsible Authority:	Shire of Serpentine Jarrahdale	
Authorising Officer:	Director Development Services – Andrew	
	Trosic	
LG Reference:	PA24/188	
DAP File No:	DAP/24/02678	
Application Received Date:	8 April 2024	
Report Due Date:	25 June 2024	
Application Statutory Process	90 Days	
Timeframe:		
Attachment(s):	1. Aerial Plan	
	2. Development Plans	
	3. Schedule of Submissions	
	4. Schedule of Government Agency	
	Responses	
	5. Planning Report	
	6. Transport Impact Statement	
	7. Bushfire Management Plan	
	8. Bushfire Emergency Evacuation Plan	
	9. Environmental Noise Assessment	
	10. Landscaping Plan	
	11. Council Minutes	

Form 1 – Responsible Authority Report

(Regulation 12)

Responsible Authority Recommendation

That the Metro Outer Development Assessment Panel resolves to:

1. **APPROVE** DAP Application reference DAP/24/02678 and accompanying plans in accordance with Clause 68 of Schedule 2 (Deemed Provisions) of the *Planning and Development (Local Planning Schemes) Regulations 2015*, and the provisions of the Shire of Serpentine Jarrahdale Local Planning Scheme No. 3, subject to the following conditions:

Conditions

1. Pursuant to clause 26 of the Metropolitan Region Scheme, this approval is deemed to be an approval under clause 24(1) of the Metropolitan Region Scheme.

- 2. This decision constitutes planning approval only and is valid for a period of 2 years from the date of approval. If the subject development is not substantially commenced within the specified period, the approval shall lapse and be of no further effect.
- 3. The development is to be carried out in compliance with plans and documentation listed below and endorsed with the Shire of Serpentine Jarrahdale stamp, except were amended by other conditions of this consent.

Plans and	Development Plans dated 22 February 2024
Specification	Transport Impact Statement dated March 2024
	Environmental Acoustic Assessment dated 13 March 2024
	Bushfire Management Plan dated 14 March 2024
	Bushfire Emergency Evacuation Plan dated 14 March 2024
	Landscaping Plan dated 29 February 2024

- 4. Prior to the lodgement of a Building Permit, a Stormwater Management Plan must be submitted to and approved by the Shire of Serpentine Jarrahdale. The Stormwater Management Plan should be developed in accordance with Local Planning Policy 2.4: Water Sensitive Urban Design Guidelines. Once approved, stormwater must be managed in accordance with the approved plan.
- 5. Prior to the lodgement of a Building Permit, detailed civil drawings showing pedestrian infrastructure are to be submitted to and approved by the Shire of Serpentine Jarrahdale. The plans shall detail pedestrian infrastructure linking to the existing footpaths. The works associated with the pedestrian infrastructure are to be completed prior to occupation of the development.
- 6. The vehicle parking areas, accessways, internal roads and crossovers must:
 - a. Be designed in accordance with the relevant Australian/New Zealand Standard;
 - b. Include a suitable number of car parking spaces dedicated to people with disability designed in accordance with the relevant Australian/New Zealand Standard;
 - c. Be constructed, sealed, kerbed, drained, marked and thereafter maintained;
 - d. Sign and line marking plan to be submitted to ensure traffic does not enter via Orton Road/Cap Road;
 - e. Plans to be updated to show both crossovers not encroaching into neighbouring verge areas;
 - f. Signage to be provided showing onsite visitor bays to be Parking (5 minutes), applicable Monday to Friday between 6:30am to 9:30am and 3:00pm to 6:00pm to enable reasonable visitor car bay turnover.
- 7. Plans depicting these works are to be submitted to and approved by the Shire prior to the issue of a Building Permit. The works are to be completed prior to operation of the development, and thereafter maintained.
- 8. Prior to lodgement of a Building Permit, a Lighting Plan is to be submitted to and approved by the Shire of Serpentine Jarrahdale. The Lighting Plan shall demonstrate the provision of lighting to all access ways, car parking areas, exterior entrances to all buildings and the extent to which light from all external light sources is cast. The Lighting Plan must demonstrate lighting not causing an

adverse amenity impact on the surrounding area. Once approved, lighting is to be installed and maintained in accordance with the plan.

- 9. Prior to lodgement of a Building Permit, plans showing per cent for art shall be submitted to and approved by the Shire of Serpentine Jarrahdale, in accordance with Local Planning Policy 1.6 Public Art. Once approved, art is to be established prior to occupation of the development.
- 10. Prior to lodgement of a Building Permit, a Construction Management Plan is to be submitted to and approved by the Shire of Serpentine Jarrahdale. The Plan should address the following matters:
 - a. Management of car parking, delivery vehicles and traffic associated with the construction of the development;
 - b. Management of dust and noise.
 - c. Once approved, the Construction Management Plan shall be adhered to at all times.
- 11. Prior to the lodgement of a Building Permit, an updated Landscaping Plan shall be submitted to and approved by the Shire of Serpentine Jarrahdale. The Landscaping Plan shall detail:
 - a. Provision of vegetative landscaping within the adjoining verges of the site, and the full management of verges adjoining the site;
 - b. Detailed planting regime and plans, identifying the number of plants, species, size of tubs;
 - c. A schedule of planting including the how vegetation is planted, monitored for failure, and replaced where required.

Once approved, the Landscaping Plan shall be implemented prior to occupation and maintained thereafter.

- 12. Prior to the issue of a Building Permit, a revised Bushfire Management Plan is to be prepared and submitted in accordance with State Planning Policy 3.7 Planning in Bushfire Prone Areas, AS3959:2018 and the Guidelines to the satisfaction of the Shire of Serpentine Jarrahdale. Once approved the Bushfire Management Plan and Bushfire Emergency Evacuation Plan are to be adhered to at all times.
- 13. Prior to occupation of the development, the measures contained within the Noise Management Plan must be implemented to mitigate noise emissions to the satisfaction of the Shire of Serpentine Jarrahdale.
- 14. Prior to occupation of the development, a Waste Management Plan must be submitted to and approved by the Shire of Serpentine Jarrahdale. Once approved, development must be in accordance with the approved Waste Management Plan.
- 15. Prior to occupation of the development, a Traffic and Parking Management Plan shall be submitted to and approved by the Shire of Serpentine Jarrahdale. The Traffic and Parking Management Plan shall include all recommendations of the Traffic Impact Statement and management measures for staff parking, with particular reference to prior to 7:00am. Once approved, the Traffic and Parking Management shall be adhered to at all times.

- 16. All loading and unloading associated with the development must be undertaken within the subject property boundaries.
- 17. Operating hours are to be restricted to a drop off time of no earlier than 6:30am and a pickup time of no later than 6:30pm Monday to Friday.
- 18. The maximum number of children placed on the premises at any one time shall not exceed 96.

Advice Notes

- 1. Where an approval has so lapsed, no development shall be carried out without further approval having first been sought and obtained, unless the applicant has applied and obtained Development Assessment Panel approval to extend the approval term under regulation 17(1)(a) or local government approval under regulation 17A of the *Planning and Development (Development Assessment Panels) Regulations 2011.*
- 2. Provision of food must comply with the Food Act 2008 and the Food Standards Code which includes a Food Safety Program for service of food to vulnerable persons.
- 3. An application for the fit-out of the premise must be submitted to the Shire's Environmental Health Team for preliminary assessment. Additionally, a Food Premises Notification Registration Form must be submitted to register the premise to provide food to vulnerable persons.
- 4. Plans should be submitted with the Notification Registration Form which indicate the type of fittings and details of floors, walls and ceiling finishes prior to internal fit out.

Region Scheme	Metropolitan Region Scheme	
Region Scheme -	Urban Zone	
Zone/Reserve		
Local Planning Scheme	Shire of Serpentine Jarrahdale Local Planning	
	Scheme No. 3 (LPS3)	
Local Planning Scheme -	Urban Development	
Zone		
Structure Plan	Doley Road Precinct Local Structure Plan	
Precinct Plan	Beenyup Grove No 1- Doley Road Precinct Local	
	Development Plan	
Use Class and	Child Care Centre – "A" Land use	
permissibility:		
Lot Size:	2304m ²	
Existing Land Use:	Vacant Land	
State Heritage Register	No	
Local Heritage	🖾 N/A	
	Heritage List	
	Heritage Area	

Details: outline of development application

Design Review	\boxtimes	N/A
		Local Design Review Panel
		State Design Review Panel
		Other
Bushfire Prone Area	No	
Swan River Trust Area	Yes	

Proposal:

The application seeks approval for a 'Child Care Premises' at Lot 631, 108 Lawrence Way, Byford. It is considered that the proposal is generally consistent with the local planning framework, and it is therefore recommended that Council endorse the RAR which recommends the MODAP approve the application, subject to conditions.

Background

The subject site is located within the Beenyup Grove estate, to the south of Byford, in close proximity to the Beenyup Primary School. The site is bound by Orton Road to the south, Lawrence Way to the east and future residential development to the west and north. To the south lies a Cap road, which is the term used to describe an access road running parallel to main road for residential access (in this case Orton Rd). The subject site in context of the locality is shown following:



Figure 1 - Locality Plan

Proposed Development

The application seeks approval to construct a single storey Child Care Premises incorporating:

- Six group activity rooms, toilets, prep rooms, sleep rooms and amenities;
- An outdoor play area along the eastern and northern frontages with a total area of 688m²;
- 20 car parking bays along the western portion of the site, including one ACROD bay;
- A single full movement crossover to the north (Maive Street) and an exit only crossover to the South (Cap road);
- An enclosed bin store located to the south of the site;
- A pedestrian footpath to Lawrence Way;
- Associated signage integrated into the boundary fencing and walls; and
- Associated verge and site landscaping.

The Child Care Premises is proposed to operate in the following manner:

- 96 place allocation:
 - 20 places for children aged 0-2 years;
 - o 36 places for children aged 2-3 years; and
 - 40 places for children aged 4-5 years.
- Operating hours from 6:30am to 6:30pm, Monday to Friday with a total of 16 staff at any one time.

The proposed site plan and floor plan are shown following:



Figure 2 - Site Plan



Figure 3 - Floor Plan

Community / Stakeholder Consultation

The application was advertised for a period of 28 days from 11 April 2024 to 9 May 2024 to surrounding landowners within a 200m radius of the subject site, in accordance with Draft LPP1.4 - Advertising Development Applications. The application was also advertised on the Shire's website for the same period. At the conclusion of the consultation, one submission of support and four objections were received.

A summary of the submissions with the Applicant's comments and Officer response is contained within **attachment 3.** The objections received relate to the number of Child Care Premises in Byford.

Officer Comment:

Clause 67 of the Deemed Provisions lists all matters to be considered as part of an assessment of a development application. These matters do not include the quantity of a particular land use within a locality and as such this is not considered a valid planning consideration. Of additional note, the Mitchell Institute (policy research centre within Victoria University) undertook a study in 2022 to analyse the degrees of access to childcare in over 50,000 neighbourhoods across the nation. This had an aim to create an evidence base to identify issues of access to childcare, and classify neighbourhoods where accessibility was identified to be critical (termed a child care 'desert' based on demand for spots, vs supply of centres). Of interest, Byford was identified as heavily constrained, with child care provision at the rate of 0.264 spots available, per child. With Byford experiencing the largest natural increase of all suburbs in Western Australia, further centres are considered necessary.

Consultation with Government Agencies:

Department of Education (DoE)

Government Agency Response:

The proposed Child Day Care Centre is within close proximity of Beenyup Primary School and therefore careful consideration in line with the Western Australian Planning Commission's *Operational Policy 2.4 - Planning for School Sites* (OP 2.4) is to be taken into account. It is imperative to ensure that no adverse impacts would result from the proposal on the school's amenity including traffic congestion during peak periods, compromised parking and access to the school, and the safety of its occupants.

The Department has reviewed the information in support of the proposal and notes that it is generally consistent with the City's Local Planning Framework and relevant Local Planning Policies. Accordingly, the Department has no objections to the proposal subject to the following conditions being imposed as part of the approval:

- A Traffic Management Plan being prepared and adopted as part of planning approval to ensure that all pick-up and drop-off of children associated with the proposed childcare be contained on-site; and
- The establishment of a Construction Management Plan (CMP) to address noise, odour and dust emissions mitigation. The CMP is to include how car parking, delivery vehicles and traffic impacts associated with construction will be managed so as not to jeopardise the safety of the school community,

particularly during peak school drop off/pick up times given the anticipated increased trips on Lawrence Way and surrounding roads associated with the proposed development.

Officer Comment:

Supported. Officers have recommended the conditions of DoE as part of the Officer recommendation.

Department of Fire and Emergency Services (DFES)

Government Agency Response:

I refer to your letter dated 8 April 2024 regarding the submission of a Bushfire Management Plan (BMP) (Version 2), prepared by Eco Logical Australia and dated 14 March 2024, for the above development application. The BMP is accompanied by a Development Application Report from the proponent (Rev 0) dated 21 March 2024 for the above development application (DA).

This advice relates only to State Planning Policy 3.7: Planning in Bushfire Prone Areas (SPP 3.7) and the Guidelines for Planning in Bushfire Prone Areas (Guidelines). It is the responsibility of the proponent to ensure the proposal complies with relevant planning policies and building regulations where necessary. This advice does not exempt the applicant/proponent from obtaining approvals that apply to the proposal including planning, building, health or any other approvals required by a relevant authority under written laws.

Assessment

1. Policy Measure 6.5 a) (ii) Preparation of a BAL contour map

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Issue	Assessment	Action
Vegetation Exclusion	 Evidence to support the exclusion of parts of Plot 2 as managed to low threat in accordance with AS3959 is required. Specifically: There is vegetation within the neighbouring property to the east which has been excluded without any evidence. Photo 5 is taken at the driveway entry to this property and shows unmanaged vegetation on the west side of the driveway. All road reserves have been excluded without evidence of management. The decision maker should be satisfired that all road reserves will be maintained as low threat by the Shire in perpetuity. There is a large area of pasture to the south (also within Plot 2). There is no evidence of an enforceable mechanism to ensure this area is managed to low threat in perpetuity. It is noted 	Impact to BAL if vegetation cannot be excluded. Modification to the BMP is required.
	that classification of this area is for accuracy purposes only and would not impact the BAL rating.	
	Alternatively, the vegetation should be classified as per AS3959, or the resultant BAL ratings may be inaccurate.	

2. Policy Measure 6.5 c) Compliance with the Bushfire Protection Criteria

Element	Assessment	Action
Location, and Siting & Design	A1.1 & A2.1 – not demonstrated The BAL ratings cannot be validated for the reason outlined in the above table.	Modification to the BMP required.
Water	A4.2 – not demonstrated It is unclear if the current reticulation system would meet the Water Corporation's 'No. 63 Water Reticulation Standard'. Thehydrant on Quadrant Parkway is 140 metres away from the proposed development. Additional information should be provided clarifying how compliance will be achieved.	Modification to the BMP is required.

3. AS3959 construction standards including clause 3.2.3 adjacent structures

Issue	Assessment	Action
Building Construction Standards	Class 9 buildings should be afforded significant protection from the impacts of a bushfire due to being occupied by people who may need assistance, or be unable, to evacuate the building in the event of a bushfire. In response, revised provisions in the National Construction Code will apply in May 2025.	Comment only.
	The proposed changes include but are not limited to; minimum separation between buildings, and separation from allotment boundaries, carparking areas and hazards. It is suggested the decision maker consider applying the proposed higher construction and design standards to the proposed development.	
	Further information regarding the proposed changes can be found here: <u>https://consultation.abcb.gov.au/engagement/ncc-2022- public-comment-</u> <u>draft/supporting_documents/NCC2022VolumeOnePCD.p</u> df	

4. Policy Measure 6.6.1 Vulnerable and High-Risk land uses

Issue	Assessment	Action
Bushfire Emergency Evacuation Plan (BEEP)	The referral has included a 'Bushfire Emergency Evacuation Plan' for the purposes of addressing the policy requirements. Consideration should be given to the Guidelines Section 5.5.4 'Developing a Bushfire Emergency Evacuation Plan'. This contains detail regarding what should be included in a BEEP and will ensure the appropriate content is detailed when finalising the BEEP to the satisfaction of the Shire.	Comment only.

DFES Built Environment Branch Comment

As the proposed building is Class 9b, plans will need to be provided to DFES Built Environment Branch for assessment, as required by Regulation 18b of the Building Regulations 2012 (as amended). It is noted that as the drawings indicate this building will exceed 500m² total floor area, fire hydrant/hose coverage will need to be provided to this building. From the information available it does not appear that compliant hydrant coverage can be achieved from the existing street verge hydrants, therefore an on-site feed hydrant assembly meeting DFES Operational Requirements and AS2419 may be required.

<u>Recommendation - compliance with acceptable solutions not demonstrated -</u> <u>modifications required</u>

It is critical the bushfire management measures within the BMP are refined to ensure they are accurate and can be implemented to reduce the vulnerability of the development to bushfire. The proposed development has not demonstrated compliance to the following:

- 1. Element 1: Location,
- 2. Element 2: Siting and Design; and
- 3. Element 4: Water.

Officer Comment:

Supported. The Shire will recommend a condition of approval for the development to provide an amended Bushfire Management Plan in accordance with the Guidelines prior to the lodgement of a Building Permit.

Statutory Environment

Legislation

- Planning and Development Act 2005
- Planning and Development (Local Planning Schemes) Regulations 2015
- Environmental Protection (Noise) Regulations 1997
- Planning and Development (Development Assessment Panel) Regulations 2011
- Metropolitan Region Scheme

Local Planning Framework

- Shire of Serpentine Jarrahdale Local Planning Scheme No. 3 (LPS3)
- Shire of Serpentine Jarrahdale Local Planning Strategy
- Doley Road Precinct Local Structure Plan
- Beenyup Grove No 1 Doley Road Precinct Local Development Plan

State Planning Policies

- State Planning Policy 3.7 Planning in Bushfire Prone Areas (SPP3.7)
- Planning Bulletin 72/2009 Child Care Centres

Local Planning Policies

- Draft Local Planning Policy 1.4 Advertising Development Applications (DLPP1.4)
- Local Planning Policy 1.6 Public Art for Major Developments (LPP1.6)
- Local Planning Policy 4.11 Advertising Policy (LPP4.11)

• Local Planning Policy 4.24 - Child Minding Centres (LPP4.24)

Planning Assessment

Clause 67 of the Deemed Provisions lists matters to be considered in the determination of development applications. An assessment was carried out against the planning framework in accordance with Clause 67 of the Deemed Provisions.

Land Use

The subject site is zoned 'Urban Development' under Local Planning Scheme No. 3 (LPS3). The lot is subject to the Doley Road Precinct Local Structure Plan (LSP) which designates the site as 'Residential'. The LSP map has been overlayed over the site shown following:



Figure 4 - LSP

A Child Care Premise is defined under LPS3 as follows:

"means premises where -

- (a) an education and care service as defined in the Education and Care Services National Law (Western Australia) Section 5(1), other than a family day care service as defined in that section, is provided; or
- (b) a childcare service as defined in the Child Care Services Act 2007 section 4 is provided."

A Child Care Premises is an 'A' land use in both the 'Urban Development' zone and the 'Residential' zone, as designated under the LSP. This means that it is a land use that is not permitted unless the Local Government has exercised its discretion by granting development approval after advertising the application.

Local Planning Scheme No. 3 (LPS3)

LPS3 states the 'Urban Development' zone, amongst other things, is "to provide an intention of future land use and a basis for more detailed structure planning in accordance with the provisions of this Scheme." As previously stated, an LSP has been prepared for the area where the subject site is designated as 'Residential'. The objectives of the 'Residential' zone under LPS3 are as follows:

- "To provide for a range of housing and a choice of residential densities to meet the needs of the community now and into the future.
- To facilitate and encourage high quality design, built form and streetscapes throughout residential areas which is appropriate to the climate.
- To provide for a range of non-residential uses, which are compatible with and complementary to residential development."

The objectives support a range of non-residential uses where they are compatible with and complementary to residential development. The expectation is for development to be of a high-quality design, built form and provide developed and integrated streetscapes.

The proposed Child Care Premises is considered to meet the objectives as it provides a service to and is complimentary with the residential area. As it is located in close proximity to the Beenyup Primary School to the north, it provides the locality and immediate users the convenience of a Child Care Premise and a School. The proposed design is considered complementary to the future residential development of the area as the proposal features a pitched roof design and varied material facades. Parking is located to the rear of the site out of view from the road frontages. Landscaping is proposed as part of the development to soften and integrate the built form into the streetscape.

State Planning Policy 3.7 - Planning in Bushfire Prone Areas (SPP3.7)

The lot is designated as bushfire prone under the Department of Fire and Emergency Services (DFES) mapping and therefore requires consideration against SPP3.7. The applicant has submitted a Bushfire Management Plan (BMP) (**attachment 7)** demonstrating the development will be located in an area with a bushfire attack level (BAL) of BAL-12.5, consistent with SPP3.7.

The application is also required to be assessed against the Guidelines for Planning in Bushfire Prone Areas (Guidelines) as detailed following:

Bushfire Protection Criteria	Provided:	Compliant:
Element 1: Location	The proposed building within the subject site will be in an area subject to a BAL rating of ≤ BAL- 12.5	Yes
Element 2: Siting and design of development A2.1 Asset Protection Zone (APZ)		Yes
Element 3: Vehicular access	The subject site is accessed via existing public roads, with access/egress point into subject site coming off Maive Street. An egress point to existing Cap road is also proposed.	Yes

Bushfire Pr Criteria	otection	Provided:	Compliant:
		All of the surrounding roads are bitumen with estimated width of the sealed surface achieving a minimum width of ≥6 m and therefore consider the existing road network would provide suitable access and egress for the community and emergency services personnel in the event of a bushfire.	
Element 4: Water		Hydrants and the existing reticulated water supply present within the surrounding recently developed Beenyup Grove Estate	Yes

The proposal is considered a "Vulnerable" land use under SPP3.7 and the Guidelines, and therefore a Bushfire Emergency Evacuation Plan (BEEP) has also been prepared. This plan outlines procedures for both evacuation and shelter-inplace to enhance the protection of occupants from the threat of a bushfire. A condition is recommended for the BEEP to be implemented during at all times of operations.

Planning Bulletin 72/2009 - Child Care Centres

The bulletin provides guidance in relation to the location and development of Child Care Premises. It states that such premises are generally encouraged within residential areas and that the ever-increasing demand for child care centres and the strong focus on their appropriate distribution and location is closely linked to demographic change. The objectives of the policy are to:

- "a) locate child care centres appropriately in relation to their surrounding service area;
- *b) minimise the impact a child care centre has on its surrounds, in particular on the amenity of existing residential areas;*
- c) minimise the impact the surrounds may have on a child care centre; and
- d) consider the health and safety of children attending the child care centre within the confines of the planning system."

The bulletin states that centres should be located to provide the maximum benefit to the community and should be within an easy walking distance and serviced by public transport. The subject proposal is considered to be located appropriately in a residential area and provides a suitable pedestrian movement network shown following:



Figure 5 - Pedestrian Network

The site is also in close proximity to a primary school which provides a complement of early learning land uses within proximity to one another.

In this regard, Officers are satisfied that that the proposal is compatible with the adjoining land uses. The site is located with the emerging area of Byford which is still undergoing urbanisation and there will be an expectance for the development to provide to the ongoing needs of the community.

Local Planning Policy 4.24 - Child Minding Centres (LPP4.24)

The development of Child Minding Centres is guided by LPP4.24 the objectives of which are as follows:

- To provide guidance for the location of Child Minding Centres to best take advantage of the surrounding natural environment and provide a compatible setting with the locality.
- To ensure that amenity impacts, including noise and traffic, are managed appropriately.
- To promote a design of Child Minding Centres which reflect the rural and natural character of the Shire.

• To provide guidance for the consideration of convenient access and layout.

LPP4.24 sets out acceptable and performance-based criteria for Child Minding Centres. Development that falls within 'acceptable' will generally be supported. Where development is 'performance based' demonstration of its acceptability is required. An assessment against LPP4.24 is shown following:

Acceptable Development	Performance Based	Comments		
Location				
Child minding centres located within easy walking distance of activity centre or recreational nodes. Located within a walkable catchment for the local neighbourhood. Larger child minding centres being encouraged to locate near or within activity centres.	The chosen location is appropriate to the proposed scale of the child minding centre, and such location benefits from integration with the surrounding natural and built environment.	Acceptable - The proposal is located within a walkable catchment to the local neighbourhood and is easily accessible via Orton Road		
The location is close to or adjoins public open space.	Located within a walkable distance to a public open space/recreational area with good quality pathways.	Acceptable - The proposal is located 240m away from public open space.		
Child minding centres are adequately separated from any incompatible nearby uses, with this supported by a suitably qualified risk assessment forming part of an application. Such risk assessment is to consider elements such as dangerous goods, hazardous materials and public health considerations. Potentially incompatible uses (taking into account design and layout) may include, for	Where child mining centres are located within 200m of any incompatible use, such proposal demonstrates that the potential for adverse health impacts is removed. Such demonstration to be in the form of a suitably qualified consultant study.	Acceptable - The proposal would be located within a residential area and not within 200m of incompatible land use.		

Acceptable Development	Performance Based	Comments
example, outlets selling petroleum, fast-food, and alcohol or tobacco products.		
	Parking	
Parking meets the requirements of the Local Planning Scheme and demonstrates how this meets the operational aspects of the development.	Suitably demonstrates that there is sufficient parking onsite in the form of a traffic and parking assessment	Performance - The proposal results in a six bay shortfall - refer to Parking section of report
Internal driveways having two-way movement.	Design and layout demonstrate safe movement of vehicles and pedestrians internally	Acceptable - Internal driveway is a two-way movement.
Landscaped parking areas in accordance with the Local Planning Scheme.	Parking areas incorporate layers of landscaping and Water Sensitive Urban Design	Acceptable - 1 in 4 bays are proposed to be landscaped and provide a suitable tree.
Parking areas located so as to provide a separation between surrounding dwellings and outdoor play spaces		Parking area is located to the west where there are existing residential structures. The Car park will act as a buffer to noise emitted from the childcare play centre.
	Traffic	
Traffic generation poses an increase of no more than 10% of the current recorded daily volumes on the roads which the development adjoins. This is confirmed by a traffic impact statement (TIS).	Demonstrates that traffic impacts can be managed through the submission of a Traffic Management Plan. This demonstrates how traffic will be managed to not represent an adverse safety or amenity impact on the adjoining road environment.	Acceptable - A TIS has been provided that demonstrates that the childcare will not have an adverse impact on parking and traffic within the locality. It is not expected that during the establishment and peak hour movements that there will be any conflicts in the vehicle movements.

Acceptable Development	Performance Based	Comments
Development facilitates full movement access to and egress from the site.	Demonstrate that access and egress to the site will not result in unsafe manoeuvring due to the lack of full movement access.	Acceptable - There will be two access ways in and out of the site.
l.	nfrastructure Requiremen	ts
Designated pedestrian footpaths from the street to the centre and the car park to the centre.	Demonstrate that pedestrians can safely navigate to and around the site, with dedicated pathways.	Acceptable - A pedestrian network has been provided and shown within the report.
Car parking visible from the street to discourage verge parking.	Signage or other means to discourage verge or unsafe parking.	Acceptable - The car parking area is visible from the street.
	Amenity	
Outdoor play areas located in a safe place within the site, providing adequate shade, and separated from noise sensitive premises. Waste service areas appropriately screened from public areas. Setbacks to side and rear boundaries and the orientation of openings to indoor play areas located to minimise noise impacts. Acoustic impact assessment submitted demonstrates how noise will be managed, particularly from: - Indoor and outdoor	Outdoor play areas are arranged to demonstrate such will not adversely impact sensitive receptors. This is confirmed by an acoustic impact assessment and subsequent noise management plan. Noise levels are demonstrated to be consistent with the level of amenity currently afforded to an area.	Acceptable - An area of 686m ² has been proposed for outdoor play within an area enclosed safely. No shade structures are detailed within the application however these can be shown as part of the Landscaping Plan recommended as a condition. Acceptable - A screened bin storage area has been proposed within the car parking area. Acceptable - An Acoustic Assessment has been provided to the satisfaction of Officers as
- Indoor and outdoor play areas.		satisfaction of Officers as

Acceptable Development	Performance Based	Comments
- Car parking areas and the impulsive noise that comes from car access (especially staff arriving before opening and departing after closure), opening and closing of car doors, arrangement of car parking bays (staff versus visitor).		discussed in further detail later in the report
Hours of operation 7:00am to 7:00pm Monday to Friday.	Demonstrate that operation hours outside of these times would not impact amenity of the area through an acoustic impact assessment and subsequent noise management plan.	Performance - The proposed hours of operation are 6.30am to 6.30pm from Monday to Friday. However, the play area will not be used until after 7.00am to ensure compliance with the Noise Regulations. This is discussed further later in the report.
Child minding centres are not subject to unacceptable noise that could impact the health and wellbeing of children.	An acoustic impact assessment and subsequent noise management plan demonstrate that noise external to the site would not adversely impact on the wellbeing of children	Acceptable - The proposal is located in a residential area and there are no noise generating land uses in close proximity.
Sites in residential areas greater than 1000m ² in areas.	Demonstrate that sites in residential areas will be able to accommodate all activities (including parking and play areas) required on the site.	Acceptable - The proposed site is over 1000m ² in size and accommodates all services including parking and play areas.
	Landscaping	
On site landscaping and landscape of all adjoining verge areas, in accordance with the Scheme, to provide an attractive setting and contribute to the streetscape	A reduction in the on-site landscaping requirement is associated with additional verge landscaping.	Acceptable - A Landscaping Plan (attachment 10) has been submitted as part of the application. The area of Landscaping is considered sufficient however a condition

Acceptable Development	Performance Based	Comments
	Desires	requiring an updated landscaping plan is recommended to include appropriate implementation and management measures to ensure its success.
	Design	
Development has the appearance of natural materials i.e recycled clay face brick, vertical and horizontal patterns of timber cladding, rammed earth construction, earth block features, natural stone elements for columns, sheltering gable roof.	Demonstrate that the development includes natural features to elevate the rural and natural character of the Shire. Demonstrate that the proposal is in keeping with the surrounding built and natural environment.	Acceptable - The proposal utilises vertical cladding, masonry fencing, and gable pitched roofing to provide a look which matches the existing/future built environment of the residential area.
Measures should be taken to ensure that play areas are large enough and of such dimensions to be useful as play areas and positive outdoor space. Side setback and leftover building areas are not included for such purpose.	Development in residential areas mimics residential urban patterns (front yard, central placed building, driveway to one size and rear backyard).	Acceptable - Play space is provided to a total area of 682m ² in size which comprises of the entire western portion of the site, with adequate dimensions to be functional.

As demonstrated in the assessment above, the application achieves 'acceptable development' in all areas of LPP4.24 except for hours of operation and car parking provision. It is considered however, that these elements have been appropriately addressed and are discussed further under the Noise and Car Parking sections of the report.

Local Planning Policy 1.6 - Public Art

LPP1.6 provides the requirements for any major development over a \$1mil threshold to contribute to public art. The proposed development is estimated to be \$2.05mil in value and thus falls within the requirements of the policy.

No public art has been proposed at this stage of the development, therefore a condition requiring the applicant to provide art is to be made in accordance with LPP1.6. A condition is recommended in this regard.

Form of Development and Amenity

Noise:

The applicant submitted an Environmental Noise Assessment (ENA) (**attachment 9**) as part of the development application to demonstrate that the activities associated with the proposal comply with the *Environmental Protection* (*Noise*) *Regulations 1997* (Noise Regulations). In terms of the noise generating activities, the submitted ENA identifies the outdoor play area, mechanical plant (air conditioning units) and car doors opening/closing. The ENA assesses these activities against the assigned levels of the Regulations at the nearby sensitive receptors shown following:

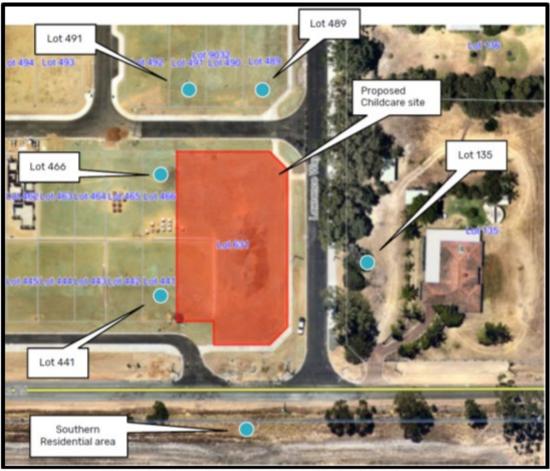


Figure 6 - Sensitive Receptors to the development

It is expected that the sound of the vehicle doors closing would be perceived as impulsive at the nearest neighbours and so would attract a 10 dB adjustment. Likewise, the sound of the mechanical services plant could be perceived as tonal and would attract a 5 dB adjustment during potentially quiet, prior to 7:00am.

These criteria applicable to the dominant noises as follows:

- child noise (daytime LA10 assigned level 45 dB),
- mechanical services noise (night-time LA10 assigned level of 35 dB) and
- carpark activity such as vehicle door closing (night-time LAmax assigned level of 55 dB).

The tables below show the results of the ENA for each noise source at each of the sensitive premises:

	Receiver							
	Lot 441	Lot 466	Lot 489	Lot 491	Eastern Lots	Southern Lot		
Noise Source	Grnd FI	Grnd FI	Grnd FI	Grnd Fl	Grnd FI	Grnd FI		
Child noise	36	40	45	45	45	41		
Mechanical noise*	24	16	12	13	23	34		
Overall	36	40	45	45	45	41		
Assigned Level	45	45	45	45	45	45		
Compliance	Achieved	Achieved	Achieved	Achieved	Achieved	Achieved		
Note * Tonality adjustme	nt applied							

Figure 7 - Day time Noise Emissions - Outdoor Play and Mechanical Plant

	Receiver						
	Lot 441	Lot 466	Lot 489	Lot 491	Eastern Lots	Southern Lot	
Noise Source	Grnd FI	Grnd FI	Grnd FI	Grnd FI	Grnd Fl	Grnd FI	
AC1*	19	11	7	9	18	29	
AC2*	20	11	7	8	18	30	
AC3*	19	11	7	8	18	30	
Overali*	24	16	12	13	23	34	
Assigned Level	35	35	35	35	35	35	
Compliance	Achieved	Achieved	Achieved	Achieved	Achieved	Achieved	
Note * Tonality adjustme	ent applied						

Figure 8 - Night-time air conditioner (AC 1-3)

				Receiver		
	Lot 441	Lot 466	Lot 489	Lot 491	Eastern Lots	Southern Lot
Noise Source	Grnd FI	Grnd FI	Grnd FI	Grnd Fl	Grnd FI	Grnd FI
Car 4**	48	51	50	57	35	44
Car 5**	49	52	48	56	32	44
Car 6**	49	53	48	55	32	44
Car 7**	50	53	46	55	32	44
Car 10**	51	52	45	53	30	45
Car 14**	52	50	39	52	30	47
Car 15**	52	49	37	51	30	48
Car 17**	52	47	36	51	30	48
Car 18**	52	48	36	50	30	49
Car 19**	52	47	34	50	30	49
Car 20**	52	47	33	50	30	50
Assigned Level	55	55	55	55	55	55
Compliance	Achieved	Achieved	Achieved	No	Achieved	Achieved
Note * Tonality adjustment applied						
** Impulsive adjustment applied						

Figure 9 - Car door noise emissions prior to 7:00am

The report identifies that noise emissions received at the sensitive receptors to the north, west and east of the site comply with the assigned levels under the Regulations except for noise from car doors which would result in exceedances at

Lot 491 during the night-time period (prior to 7:00am), when cars utilise the northern side of the car park.

Appendix A of the ENA includes a Noise Management Plan (NMP) which sets out management measures to further reduce noise resulting in compliance. This includes no parking in the bays causing exceedances prior to 7:00am. These bays are shown following:

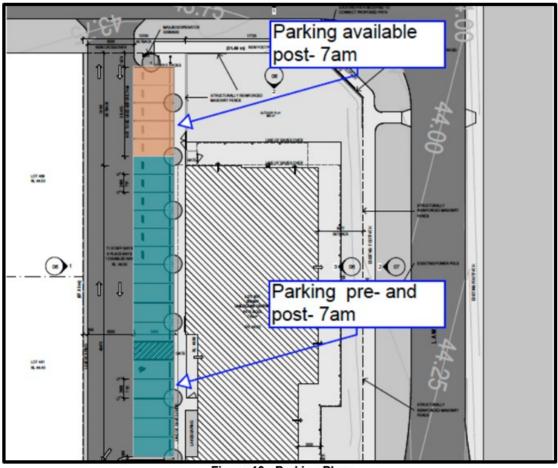


Figure 10 - Parking Plan

The NMP also recommends the following:

- construction of noise barriers along the boundaries of the site varying between 1.8m and 2.4m high;
- $\circ\,$ The collection of refuse between the hours of 7:00am 7:00pm Monday to Saturday;
- Children not permitted in the outdoor play areas prior to 7:00am;
- Particularly noisy activities i.e. musical instruments to be conducted indoors with windows closed;
- o Complaints procedure; and
- A review of plant noise after selection and locations have been finalised.

The NMP concludes that subject to these measures, the operations would comply with the Noise Regulations. Based on this, it is considered that the proposal would not adversely impact on the amenity of surrounding residents subject to adherence to the measures in the NMP. A condition is recommended in this regard.

Form of Development:

The subject site falls within the Beenyup Grove Local Development Plan (LDP). The LDP sets out the relevant provisions for development of land within the area. The proposal is designated as "Residential - R60" under the LDP. Whilst the development does not propose residential development, the provisions are considered relevant to ensure the built form is consistent with the aspirations of the LDP area. An assessment against the LDP provisions is contained within the table following:

Requirement:	Proposed:	Compliant:			
Street Setback					
2m to Primary Street	6m to Lawrence Way	Yes			
1m to Secondary Streets	15m to Maive Street				
	1.5m to Orton Road				
Boundary Setback Requ	irements				
Boundary walls permitted to both side setbacks	No walls are proposed on the adjoining boundaries	Yes			
Open Space Requiremen	its				
Minimum - 30% open space	Approximately 58% provided	Yes			
Landscaping					
Front Setback - 40% landscaped	100% of 2m setback area is landscaped	Yes			

The proposal is compliant with the requirements of the LDP, conditions are recommended to require landscaping to be provided in accordance with an approved plan prior to the submission of a Building Permit.

The proposed building is of simple form with a pitched roof. It would be of brick and rendered construction with the use of cladding in tones of grey. The elevations are shown following:



Figure 11 - Elevations

It is considered that the scale, form and external appearance of the building is reflective of the residential character, whilst also respecting the rural themes across the Shire.

The boundary treatment consists of a range of materials including masonry walls, colorbond fencing and railings. It is noted however that the ENA, as discussed earlier, recommends a solid 2.2m high barrier along Lawrence Way and 2.4m high barrier along Maive Street. Generally, in a residential area there would be an expectation for solid boundary treatment with a height of approximately 1.8m.

It is considered that such barriers can be designed to attenuate noise without adversely impacting on visual amenity. As part of the provision of public art, the applicant would be encouraged to place this on the Lawrence Way acoustic barrier to break up the appearance of a solid blank wall. Furthermore, landscaping on the verge would also help to soften the appearance of such a barrier.

Signage:

Local Planning Policy 4.11 - Advertising (LPP4.11) provides development standards for signage. The policy aims to ensures that the siting, design and general appearance of signage does not detract from the landscape values, amenity and character of the area. The application proposes the following signage as part of the development:

- One x (4m x 0.9m) wall sign located on Maive Street; and
- Five x (3.5m x 0.9m) boundary fence signs
 - o One towards Maive Street.
 - Two towards Lawrence Way.
 - Two towards Orton Road.

The image below showcases the signage as shown from the corner of Maive Street and Lawrence Way.



Figure 12 - Perspective of Signage

Requirements	Provided	Compliant	
Wall Sign			
A wall sign is to only to display the name, logo, or slogan of the business premises to which the sign is applied.	The operator's name is displayed as "Buttercups"	Yes	
The maximum single face area is 10m2 and must not extend beyond 12.0m above the ground even if the wall is higher than this.	The sign is 3.7m ² in size. 4.6m above the ground.	Yes	
Must not project more than 300mm from the wall and/or fascia to which it is affixed.	The sign is proposed to be flush to the wall.	Yes	

An assessment of the signage against LPP4.11 is shown in the table following:

Requirements	Provided	Compliant
Must not project beyond the edges of a wall and/or fascia.	The sign does not extend above the wall.	Yes
Boundary Fence Sign		
A boundary fence sign is not to be affixed to a fence unless the fence is constructed to withstand the consequent wind or other loads.	The fence is constructed of masonry material and is capable of withstanding the load.	Yes
Is a single faced sign.	All signs are single faced	Yes
The maximum sign face area is 36m2.	All signs are a total of 15.75m ² in size	Yes

The signage is consistent with LPP4.11 and a condition is recommended for all signage to be installed and maintained in accordance with the approved plans.

Car parking, Access and Traffic

Section 4.3 of LPS3 sets out parking requirements for different land uses. Parking provision is assessed in the table following:

Land Use	Parking Requirement	Required Bays	Parking Provided
Child Care Premise	1 bay per 10 children and 1 bay per employee with a minimum of 3 spaces	96 Children = 9.6 Bays 16 Staff = 16 Bays	20 bays
Total Requirements		26 Bays	
Total Short	fall		6 bays short fall

The application results in a parking shortfall of six bays. The submitted Traffic Impact Statement (TIS) (attachment 6) provides a justification for this shortfall and aims to demonstrate how onsite parking bays can appropriately accommodate the vehicles generated by the proposal.

The TIS uses modelling to estimate the demand for parking for pick up/drop offs. The number of vehicles during each peak period would be approximately 39 vehicles per hour (vph) (20 in and 19 out) and the duration of their stay would be for a maximum of seven minutes. The modelling uses a probability analysis which identifies that in any 7-minute period, the 95th percentile number of pick ups/drop offs would result in eight vehicles or less being in the car park. Outside of peak hours the demand for parking would be less. The analysis is shown following:



Figure 13 - Probability Analysis for child drop off and pickup

The TIS makes the following recommendations based on the parking analysis:

- *"Maximum 12 car bays reserved for staff onsite.*
- Minimum 8 visitor car parking bays reserved for pick-up and drop-off onsite.

It is recommended that the onsite visitor car parking bays have time restriction signage installed "P5min" parking (5 minutes) applicable Monday to Friday between 6:30am to 9:30am and 3:00pm to 6:00pm."

With regard to the five bays that would not be utilised prior to 7:00am, as required by the ENA, these bays will be designated for staff bays only. The number of staff during the day will vary as not all staff will be on site at all times. Staff arriving prior to 7:00am will not be permitted to use the bays identified as resulting in noise exceedances.

It is considered that based on the TIS, parking is capable of being managed appropriately. It is however recommended that a condition is imposed to require a Parking Management Plan prior to operation of the development. The Parking Management Plan will set out the details recommended in the TIS, car park signage, as well as the management measures for staff parking, particularly prior to 7:00am.

Access:

Vehicle access is proposed to be via one full-movement crossover on Maive Street and one exit only crossover on the Cap road running parallel with Orton Road. It is worth noting that Orton Road is expected to be upgraded in the future in this location to include a single lane each way separated by a central median with a cycle path, street parking, and a pedestrian footpath within the verge. This is consistent with the existing planned upgrades on Orton Road which will eventually be replicated from Hopkinson Road to South Western Highway. A cross section of the proposed Orton Road is shown following:

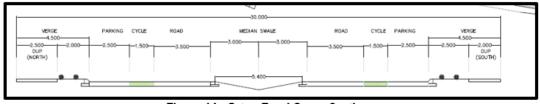


Figure 14 - Orton Road Cross Section

In addition the intersection of Orton Road and Lawrence Way will be ultimately upgraded with a roundabout, however the design has not yet been finalised. The TIS shows how the access arrangement will work now and subsequent to the upgrades as shown following:



Figure 15 - Initial Access vs Final Access Arrangements

The proposed access is considered safe and efficient, the proposed exit onto the Cap road will not cause any undue stress on the local roadway and the addition of the future roundabout at the intersection of Orton Road and Maive Street will ensure optimal traffic flow for vehicles travelling in an easterly and westerly direction upon exiting the site. A condition is recommended for all crossovers to be constructed to the satisfaction of the Shire.

Traffic:

The TIS identifies that the category of vehicles associated with the proposed development will predominantly comprise of small passenger vehicles dropping off and picking up children, as well as similar staff and waste vehicles.

The TIS identifies that the AM and PM peak periods for the early learning centre is between 7:00am to 10:00am and 3:00pm to 6:00pm, respectively. The proposal is estimated to generate 384 vehicles per day (vpd) with 78 vph generated during the AM and PM peaks (in and out).

Land use	Quantity	Daily		PM Trips	AM Pea	ık Trips	PM Pea	ık Trips
Lanu use 🔾	Trips	Awimps	FWI ITIPS	IN	OUT	IN	OUT	
Child Care	96	384	78	78	39	39	39	39
Total		384	78	78	39	39	39	39

The WAPC's Transport Impact Assessment Guidelines for Developments provides that "As a general guide, an increase in traffic of less than 10 percent of capacity would not normally be likely to have a material impact on any particular section of road but increases over 10 percent may. All sections of road with an increase greater than 10 percent of capacity should therefore be included in the analysis. For ease of assessment, an increase of 100 vehicles per hour for any lane can be considered as equating to around 10 percent of capacity. Therefore, any section of road where development traffic would increase flows by more than 100 vehicles per hour for any lane should be included in the analysis."

Maive Street and the Cap road are classified as Access Roads under the Main Roads Western Australia (MRWA) road hierarchy, being assigned a speed limit of 50 km/h. Access Roads have a maximum desirable volume of 3,000 vpd. Orton Road is classified as a Local Distributor with a maximum desirable volume of 6,000 vpd, accommodating a speed 50km/h within the built-up area. Based on the development generating 78vph in peak period, the proposal would not result in an increase of more than 10% of the roads capacity and as such the local road network is considered capable of accommodating the traffic generated by the development.

<u>Waste</u>

The application provides a bin store for the storage of waste from the site, located towards the southern side of the rear car park and is proposed to be screened from view.

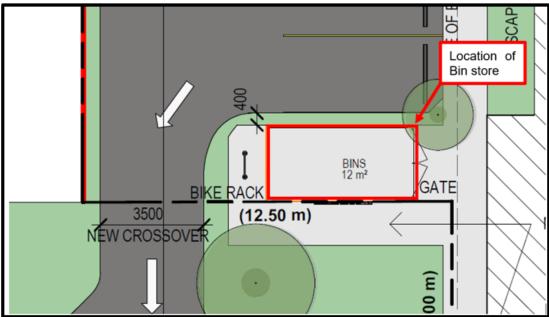
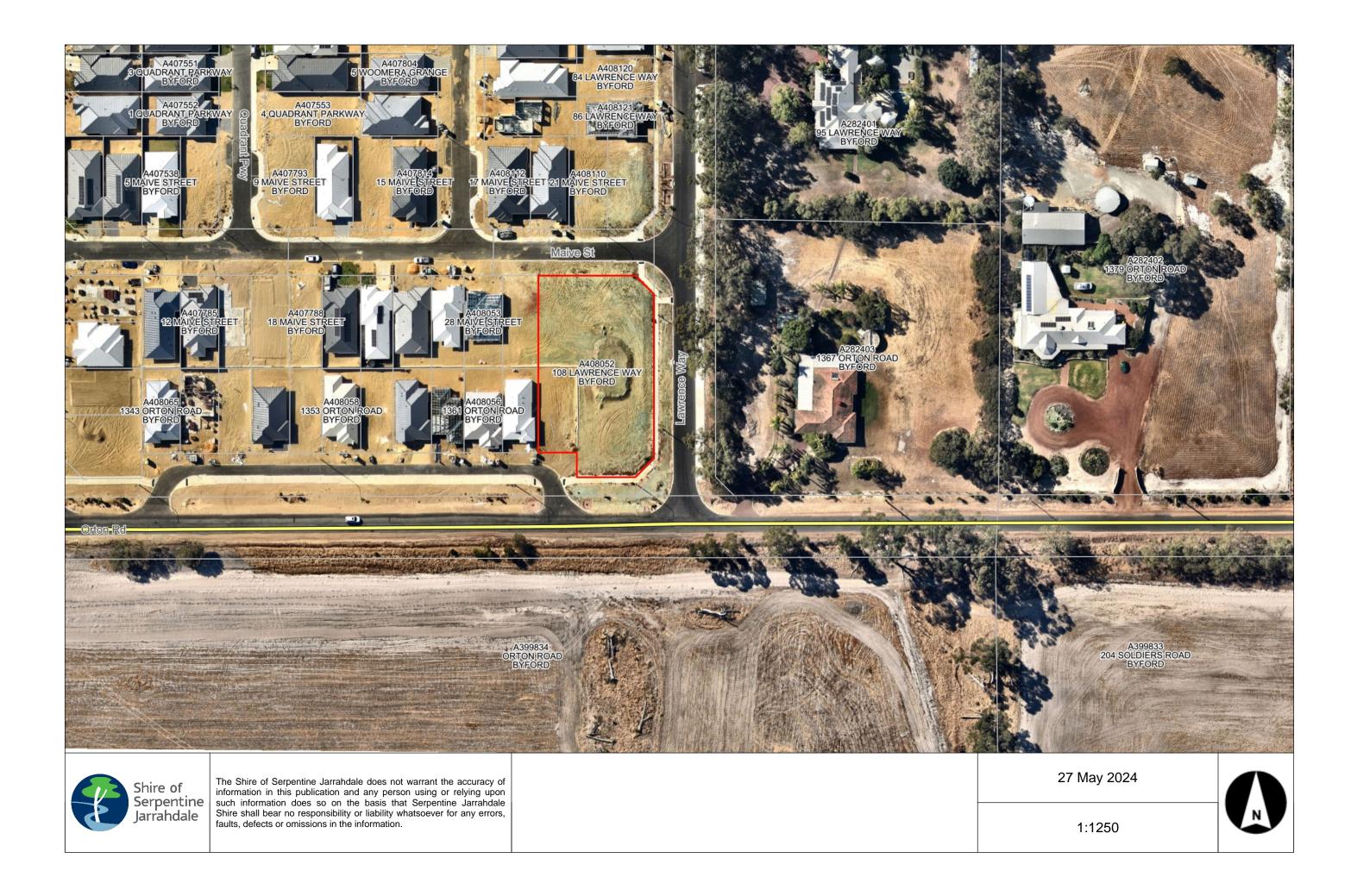


Figure 16 - Location of Bin Store

Currently there are no details provided regarding the waste capacity of the site or details of collection. In particular, to demonstrate that waste is collected outside of peak hours and during the times recommended in the NMP it is recommended that a Waste Management Plan (WMP) is submitted prior to occupation of the development. A condition is proposed in this regard.

Conclusion:

The application seeks approval for a Child Care Premises accommodating up to 96 children. Officers consider that the development is generally consistent with the planning framework, and subject to conditions, recommends that the MODAP approve the application.





BEENYUP GROVE CHILDCARE CENTRE

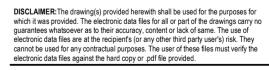
LAWRENCE WAY BYFORD WA 6122



Amendment PRELIMINARY Revision 2 DA ISSUE OPERATOR CHANGED Date 19/12/2022 12/01/2023 16/02/2023 22/02/2024

01	COVER SHEET	
02	SITE PLAN - INTERIM	
03	SITE PLAN - FUTURE PLAN	
04	FLOOR PLAN	
05	ROOF PLAN	
06	ELEVATIONS	
07	STREET ELEVATIONS	
80	3D VIEW	
09	3D VIEWS	
10	3D VIEWS	



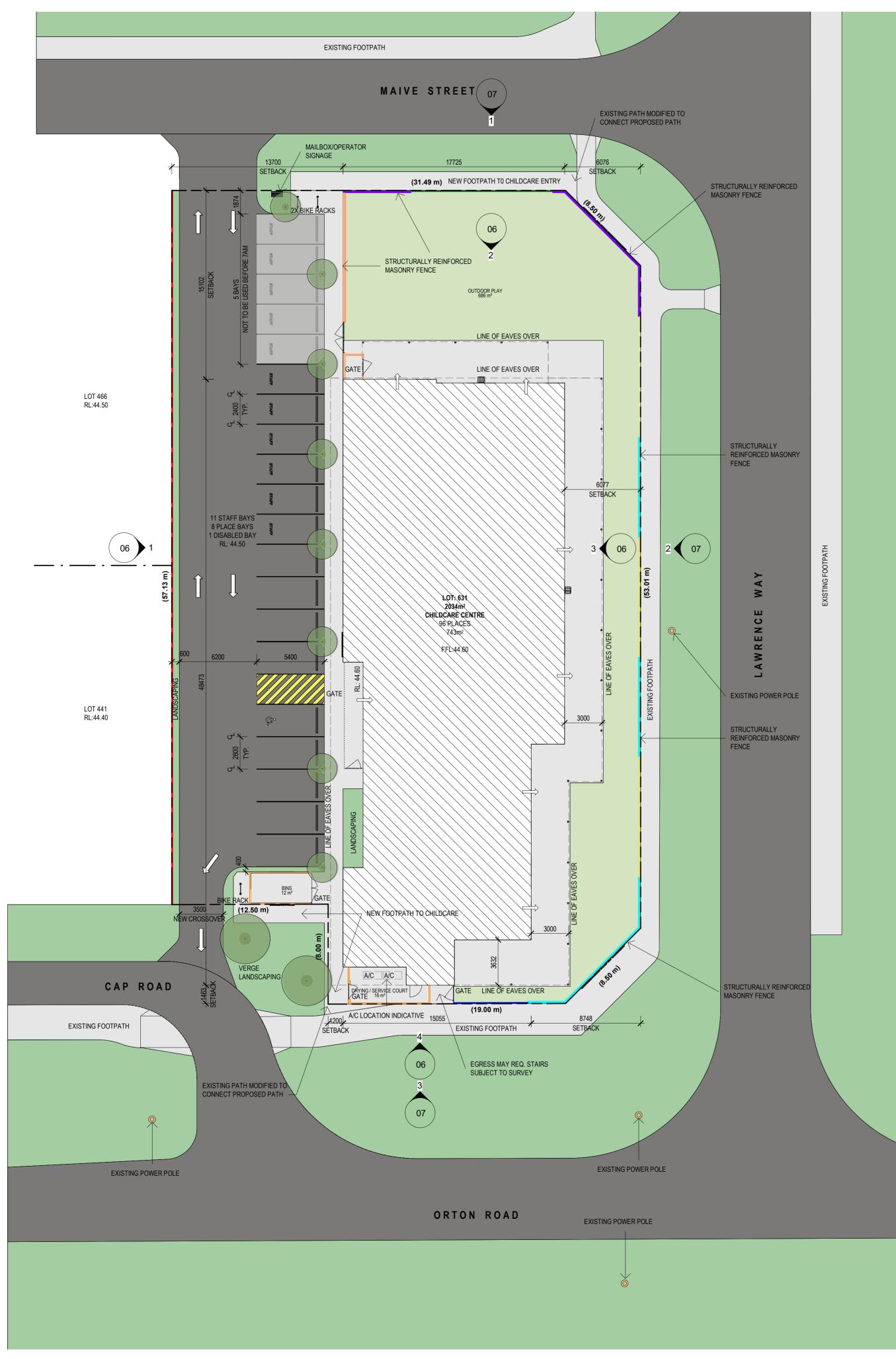




BEENYUP GROVE CHILDCARE CENTRE, LOT 631(108) LAWRENCE WAY BYFORD, WA 6122

COVER SHEET

Scale Drawn	1 : 1 Author	Checked Checker	
Date	22/02/2024		
Job No.	2022065		
Dwg No.	2809 01	Rev: D	A1 SHEET



1 - SITE PLAN - INTERIM PLAN 1:200



LOCATION PLAN

NTS NOTE

FOOTPATHS, ROAD LAYOUT, SITE BOUNDARIES, SERVICE LOCATION AND LEVELS ARE INDICATIVE ONLY. QUALIFIED SURVEYOR IS TO UNDERTAKE FEATURE CONTOUR SURVEY PRIOR TO ANY DEVELOPMENT.

FENCE TYPES

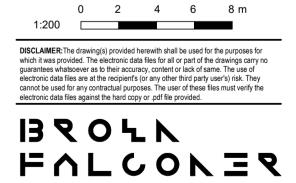
FN01	SLAT FE CLEAR BACKIN FENCE	AL BLADE ENCING WITH ACRYLIC			
FN02	MASON COLOU QUART	GH RENDERED IRY WALL R: HOG BRISTLE ER WITH ANTI- TI COATING			
FN03	2.2m HIC COLORE MONUM	BOND FENCE:			
FN04	SLAT F CLEAR BACKIN FENCE	AL BLADE ENCING WITH ACRYLIC			
FN05	MASON COLOU QUART	IGH RENDERED NRY WALL IR: HOG BRISTLE ER WITH ANTI- TI COATING			
FN06	MASON COLOU QUART	IGH RENDERED NRY WALL IR: HOG BRISTLE TER WITH ANTI- TI COATING			
FN07	SLAT F CLEAR BACKIN FENCE	CAL BLADE ENCING WITH ACRYLIC			
PROJECT SUM	MARY				
BEENYUP GRO	OVE CHILI	D CARE CENTRE			
			96		
TOTAL SITE A SITE AREA PE			2304m ² 24m ²		
BUILDING ARE			743m ²		
BUILDING ARE		ACE	7.74m ² 64m ²		
LANDSCAPING		TE	2.8%		
TOTAL OUTDO OUTDOOR PL			672m ² 693m ²		
REGULAR PAF	RKING BA	YS	8		
STAFF PARKI		Ve	11		
DISABLED PAI TOTAL BAYS			1 20(19.2 RE)	Q.)	
		UNENCUMBEREI SPACE PROV.	SPACE REQ.		
ACTIVITY 1	8	26.3m ²	26m ²	1:4	2
ACTIVITY 2 ACTIVITY 3	8 20	26.1m ² 66m ²	26m ² 65m ²	1:4 1:5	2 4
ACTIVITY 4	20	65.2m ²	65m ²	1:5	4
ACTIVITY 5	20	65.1m ²	65m ²	1:10	2
ACTIVITY 6 TOTAL	20 96	65.4m ²	65m ²	1:10	2 16
IVIAL	50				10

DA ISSUE
ISSUED FOR DEVELOPMENT APPROVAL

Amendment PRELIMINARY Revision 2 Revision 3 DA ISSUE OPERATOR CHANGED

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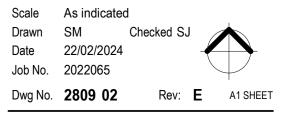
Date 19/12/2022 12/01/2023 23/01/2023 16/02/2023 22/02/2024

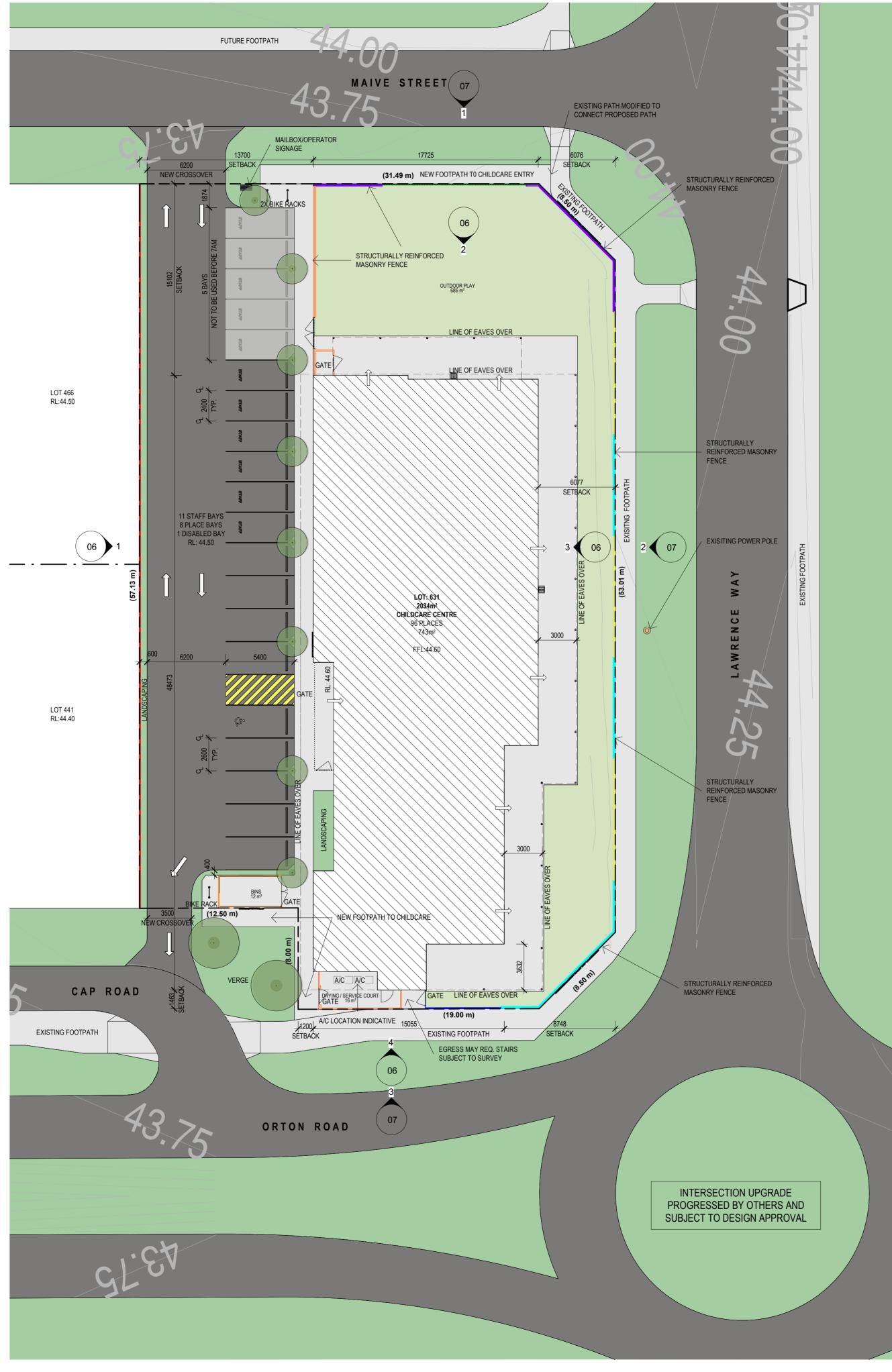


9/300 Rokeby Road, Subiaco, Western Australia 6004 Telephone:08 6382 0303 ABN 65 007 846 586 brownfalconer.com.au

BEENYUP GROVE CHILDCARE CENTRE, LOT 631(108) LAWRENCE WAY BYFORD, WA 6122

SITE PLAN - INTERIM





1 - SITE PLAN - FUTURE PLAN



LOCATION PLAN

NTS NOTE

FOOTPATHS, ROAD LAYOUT, SITE BOUNDARIES, SERVICE LOCATION AND LEVELS ARE INDICATIVE ONLY. QUALIFIED SURVEYOR IS TO UNDERTAKE FEATURE CONTOUR SURVEY PRIOR TO ANY DEVELOPMENT.

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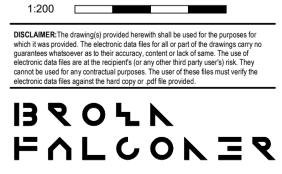
FN01	SLAT F CLEAR BACKIN FENCE	CAL BLADE ENCING WITH ACRYLIC			
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FN05	MASO COLO QUAR	HIGH RENDERED NRY WALL UR: HOG BRISTLE TER WITH ANTI- FTI COATING			
FN06	MASO COLO QUAR	HIGH RENDERED NRY WALL UR: HOG BRISTLE TER WITH ANTI- FTI COATING			
FN07	SLAT F CLEAF BACKI FENCE	CAL BLADE ENCING WITH ACRYLIC			
PROJECT SU					
BEENYUP GR	OVE CHILI	CARE CENTRE			
NUMBER OF TOTAL SITE A SITE AREA PI BUILDING AR BUILDING AR LANDSCAPIN LANDSCAPIN	AREA ER PLACE EA EA PER PL G AREA		96 2304m ² 24m ² 743m ² 7.74m ² 64m ² 2.8%		
TOTAL OUTD OUTDOOR PL			672m ² 693m ²		
REGULAR PA STAFF PARKI DISABLED PA TOTAL BAYS	RKING BA` NG BAYS RKING BA	YS	8 11 1 20(19.2 REG	l.)	
ROOM	PLACES	UNENCUMBERED SPACE PROV.	UNENCUMBERED SPACE REQ.	STAFF RATIO	STAFF REQ.
ACTIVITY 1 ACTIVITY 2 ACTIVITY 3 ACTIVITY 4 ACTIVITY 5 ACTIVITY 6 TOTAL	8 20 20 20 20 20 96	26.3m ² 26.1m ² 66m ² 65.2m ² 65.1m ² 65.4m ²	26m ² 26m ² 65m ² 65m ² 65m ² 65m ²	1:4 1:4 1:5 1:5 1:10 1:10	2 2 4 2 2 2 16



Amendment

PRELIMINARY Revision 2 Revision 3 DA ISSUE OPERATOR CHANGED

Date 19/12/2022 12/01/2023 23/01/2023 16/02/2023 22/02/2024



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BEENYUP GROVE CHILDCARE CENTRE, LOT 631(108) LAWRENCE WAY BYFORD, WA 6122

SITE PLAN - FUTURE PLAN

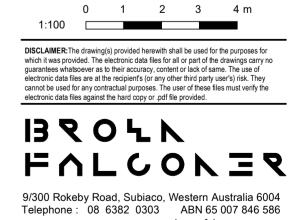
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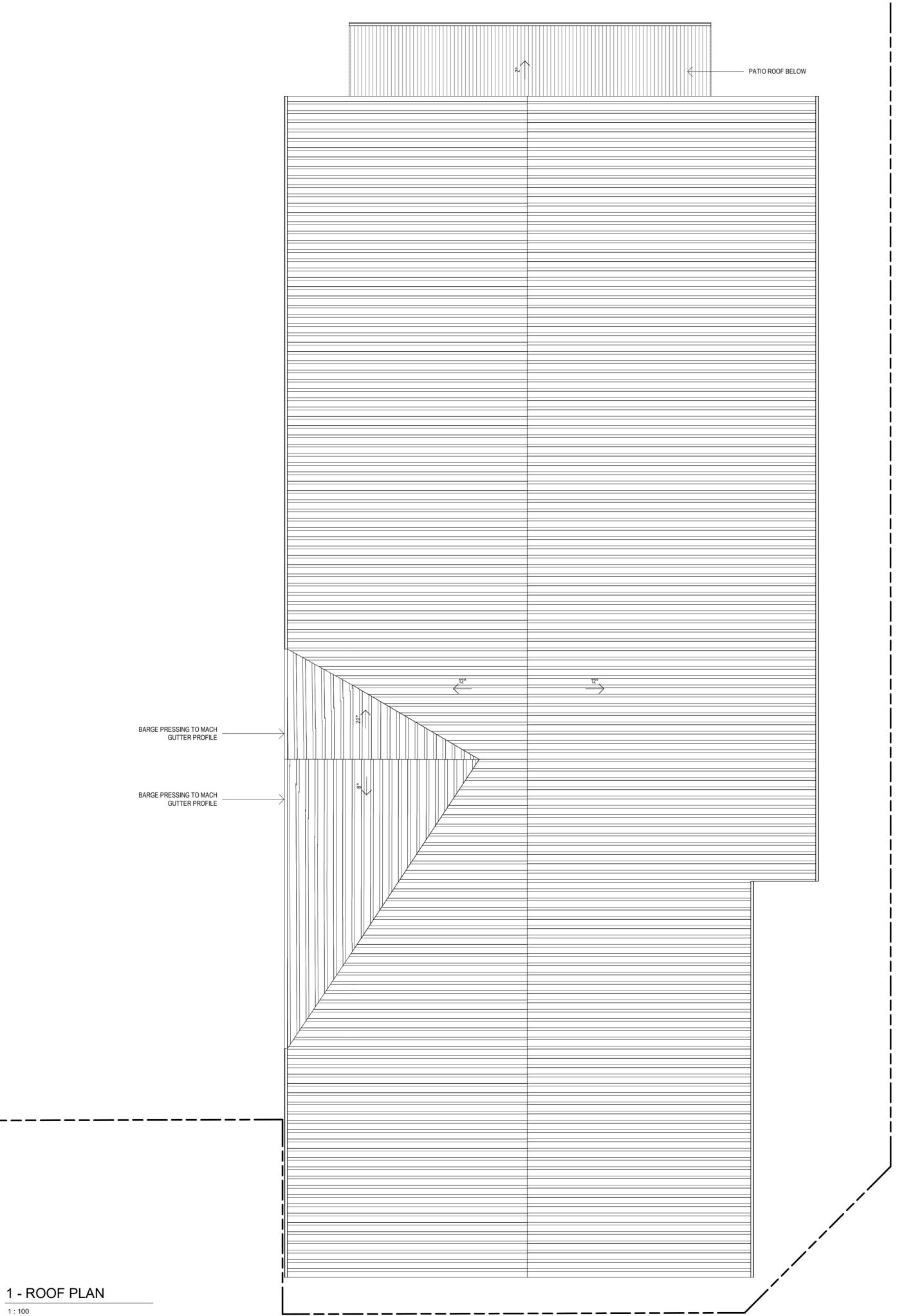


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FLOOR PLAN

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ROOF PLAN

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1 - WEST ELEVATION

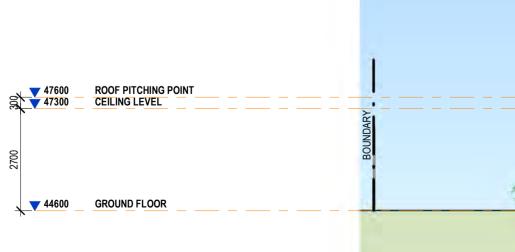
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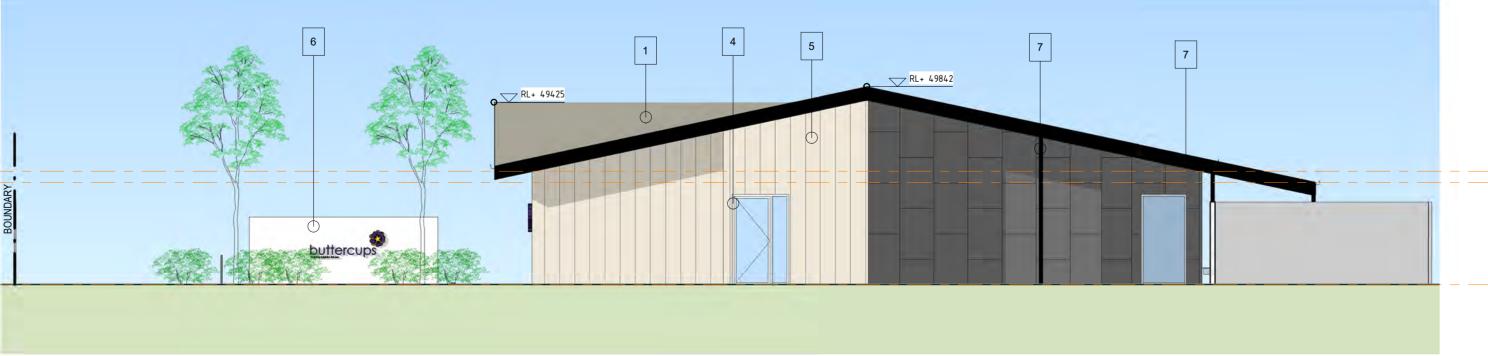


2 - NORTH ELEVATION









4 - SOUTH ELEVATION

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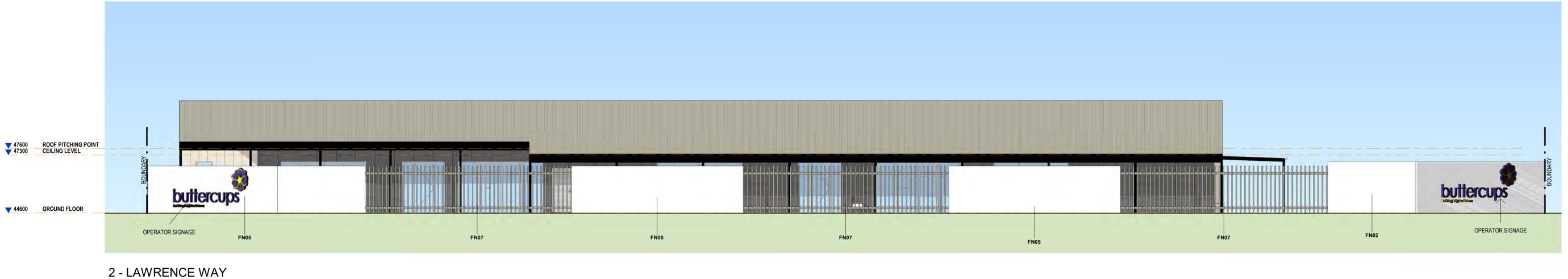
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BEENYUP GROVE CHILDCARE CENTRE, LOT 631(108) LAWRENCE WAY BYFORD, WA 6122

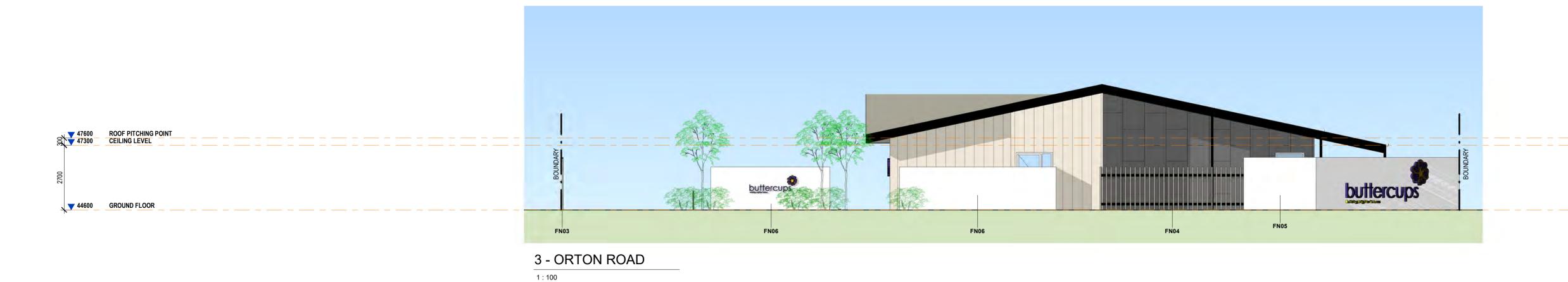
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Date 19/12/2022 12/01/2023 23/01/2023 16/02/2023 22/02/2024

FENCE TYPES

FN01	2.4m HIGH VERTICAL BLADE SLAT FENCING WITH CLEAR ACRYLIC BACKING FENCE COLOUR: COLORBOND DUNE
FN02	2.4m HIGH RENDERED MASONRY WALL COLOUR: HOG BRISTLE QUARTER WITH ANTI- GRAFFTI COATING
FN03	2.2m HIGH COLORBOND FENCE: MONUMENT
FN04	1.8m HIGH VERTICAL BLADE SLAT FENCING WITH CLEAR ACRYLIC BACKING FENCE COLOUR: COLORBOND DUNE
FN05	2.2m HIGH RENDERED MASONRY WALL COLOUR: HOG BRISTLE QUARTER WITH ANTI- GRAFFTI COATING
FN06	1.8m HIGH RENDERED MASONRY WALL COLOUR: HOG BRISTLE QUARTER WITH ANTI-

MASONRY WALL COLOUR: HOG BRISTLE QUARTER WITH ANTI-GRAFFTI COATING 2.2m HIGH VERTICAL BLADE

FN07

SLAT FENCING WITH CLEAR ACRYLIC BACKING FENCE COLOUR: COLORBOND DUNE

FENCE COLOUR: COLORBOND DUNE

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BEENYUP GROVE CHILDCARE CENTRE, LOT 631(108) LAWRENCE WAY BYFORD, WA 6122

STREET ELEVATIONS

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NORTH WEST PERSPECTIVE

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BEENYUP GROVE CHILDCARE CENTRE, LOT 631(108) LAWRENCE WAY BYFORD, WA 6122

3D VIEW

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ENTRY

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BEENYUP GROVE CHILDCARE CENTRE, LOT 631(108) LAWRENCE WAY BYFORD, WA 6122

3D VIEWS

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CORNER OF MAIVE STREET AND LAWRENCE WAY

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BEENYUP GROVE CHILDCARE CENTRE, LOT 631(108) LAWRENCE WAY BYFORD, WA 6122

3D VIEWS

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Job No.	2022065		
Dwg No.	2809 10	Rev: E	A1 SHEET

Submitter	No	Submitter Comments	Applicant Response	Officer Comment
Department of Education	1	Thank you for your letter dated 8 April 2024 providing the Department of Education (the Department) with the opportunity to comment on the abovementioned proposal.		See Consultation with Government Agencies section of report
		The proposed Child Day Care Centre is within close proximity of Beenyup Primary School and therefore careful consideration in line with the Western Australian Planning Commission's Operational Policy 2.4 – Planning for School Sites (OP 2.4) is to be taken into account. It is imperative to ensure that no adverse impacts would result from the proposal on the school's amenity including traffic congestion during peak periods, compromised parking and access to the school, and the safety of its occupants.		
		The Department has reviewed the information in support of the proposal and notes that it is generally consistent with the City's Local Planning Framework and relevant Local Planning Policies. Accordingly, the Department has no objections to the proposal subject to the following conditions being imposed as part of the approval:		
		 A Traffic Management Plan being prepared and adopted as part of planning approval to ensure that all pick-up and drop-off of children associated with the proposed childcare be contained on-site; and The establishment of a Construction Management Plan (CMP) to address noise, odour and dust emissions mitigation. The CMP is to include how car parking, delivery vehicles and traffic impacts associated with 		

Submitter	No	Submitter Comments	Applicant Response	Officer Comment
		 construction will be managed so as not to jeopardise the safety of the school community, particularly during peak school drop off/pick up times given the anticipated increased trips on Lawrence Way and surrounding roads associated with the proposed development. Should you have any queries on the above, please contact Jack Sirett, Senior Consultant – Land 		
		Planning on (08) 9264 5374, or by email at jack.sirett@education.wa.edu.au.		
Department of Fire and Emergency Services	2			See Consultation with Government Agencies section of report
A405400	3	I object to yet another Daycare Centre being built in Byford. We have more than enough to accommodate. Build as and when required no beforehand.	The proposed land use of "Child Care Premises" is listed as an "A" use in the City's Local Planning Scheme No.3. As such, the land use is capable of approval subject to the discretion of the Local Authority. Overall, the proposed use is demonstrated to be consistent with the objectives of the zone and therefore warrants approval.	Noted. The proposal is assessed in accordance with the Local Planning Scheme No.3 to determine compatibility of the land use. Clause 67 of the Regulations do not consider demand to be a valid planning consideration.
A408114	4	I write to support this development application for the proposed child care centre. This centre is a much needed resource for the Byford community and will provide essential child care placements for families in the Byford suburb.	Support of this development is noted, and appreciated. We agree that the proposed use will provide a critical community resource for families in the area.	Noted.

Submitter	No	Submitter Comments	Applicant Response	Officer Comment
A401772	5	We don't need another say care centre.	The proposed use will provide a critical community resource for families in the area. The proposed land use of "Child Care Premises" is listed as an "A" use in the City's Local Planning Scheme No.3. As such, the land use is capable of approval subject to the discretion of the Local Authority. Overall, the proposed use is demonstrated to be consistent with the objectives of the zone and therefore warrants approval.	accordance with the Local Planning Scheme No.3 to determine compatibility of the land use. Clause 67 of the Regulations do not consider demand to be a valid
Occupier	6	I will not be impacted by the proposal. But seriously. These day care centres are getting as bad as doctors surgery and bottle shops in Byford. Develop it in Mundijong. Not here. The ones here are not at capacity yet. The boom for houses and young families will slow down here soon	The proposed design and layout of the development has considered the local context and surrounding development to ensure an appropriate built form and interface to the surrounding locality. The proposed development is also supported by the necessary technical reporting to demonstrate the sites suitability for this location from a traffic, acoustic and bushfire perspective.	accordance with the Local Planning Scheme No.3 to determine compatibility of the land use. The proposal is considered to meet all the relevant statutory framework
				Clause 67 does not consider future forecasts as a matter to be considered.
A407015	7	Byford has already too much childcare centres that need to be filled with not enough childcare educators in the sector. Fill the other childcare centre first and provide more educators before opening up a new centre.	The proposed development will provide an important service to the growing residential population for Byford. This facility will be suitably staffed and operated in accordance with the Department of Education requirements.	accordance with the Local Planning Scheme No.3 to determine

Submitter	No	Submitter Comments	Applicant Response	Officer Comment
				commencement of operation and will grow as the demand increases.



Our Ref: D34301 Your Ref: PA24/188

Marius Le Grange Shire of Serpentine-Jarradale info@sjshire.wa.gov.au

Dear Mr Le Grange

RE: VULNERABLE LAND USE - LOT 631 (108) LAWRENCE WAY, BYFORD – CHILDCARE CENTRE - DEVELOPMENT APPLICATION

I refer to your letter dated 8 April 2024 regarding the submission of a Bushfire Management Plan (BMP) (Version 2), prepared by Eco Logical Australia and dated 14 March 2024, for the above development application. The BMP is accompanied by a Development Application Report from the proponent (Rev 0) dated 21 March 2024 for the above development application (DA).

This advice relates only to *State Planning Policy 3.7: Planning in Bushfire Prone Areas* (SPP 3.7) and the *Guidelines for Planning in Bushfire Prone Areas* (Guidelines). It is the responsibility of the proponent to ensure the proposal complies with relevant planning policies and building regulations where necessary. This advice does not exempt the applicant/proponent from obtaining approvals that apply to the proposal including planning, building, health or any other approvals required by a relevant authority under written laws.

Assessment

Issue	Assessment	Action
Vegetation Exclusion	Evidence to support the exclusion of parts of Plot 2 as managed to low threat in accordance with AS3959 is required. Specifically:	Impact to BAL if vegetation cannot be excluded.
	 There is vegetation within the neighbouring property to the east which has been excluded without any evidence. Photo 5 is taken at the driveway entry to this property and shows unmanaged vegetation on the west side of the driveway. All road reserves have been excluded without evidence of management. The decision maker should be satisfired that all road reserves will be maintained as low threat by the Shire in perpetuity. There is a large area of pasture to the south (also within Plot 2). There is no evidence of an enforceable mechanism to ensure this area is managed to low threat in perpetuity. It is noted 	Modification to the BMP is required.

1. Policy Measure 6.5 a) (ii) Preparation of a BAL contour map

that classification of this area is for accuracy purposes only and would not impact the BAL rating.	
Alternatively, the vegetation should be classified as per AS3959, or the resultant BAL ratings may be inaccurate.	

2. Policy Measure 6.5 c) Compliance with the Bushfire Protection Criteria

Element	Assessment	Action
Location, and Siting & Design	A1.1 & A2.1 – not demonstrated The BAL ratings cannot be validated for the reason outlined in the above table.	Modification to the BMP required.
Water	 A4.2 – not demonstrated It is unclear if the current reticulation system would meet the Water Corporation's 'No. 63 Water Reticulation Standard'. Thehydrant on Quadrant Parkway is 140 metres away from the proposed development. Additional information should be provided clarifying how compliance will be achieved. 	Modification to the BMP is required.

3. AS3959 construction standards including clause 3.2.3 adjacent structures

Issue	Assessment	Action
Building Construction Standards	Class 9 buildings should be afforded significant protection from the impacts of a bushfire due to being occupied by people who may need assistance, or be unable, to evacuate the building in the event of a bushfire. In response, revised provisions in the National Construction Code will apply in May 2025.	Comment only.
	The proposed changes include but are not limited to; minimum separation between buildings, and separation from allotment boundaries, carparking areas and hazards. It is suggested the decision maker consider applying the proposed higher construction and design standards to the proposed development.	
	Further information regarding the proposed changes can be found here: <u>https://consultation.abcb.gov.au/engagement/ncc-2022-</u> <u>public-comment-</u> <u>draft/supporting_documents/NCC2022VolumeOnePCD.p</u> <u>df</u>	

4. Policy Measure 6.6.1 Vulnerable and High-Risk land uses

Issue	Assessment	Action
Bushfire Emergency Evacuation Plan (BEEP)	The referral has included a <i>'Bushfire Emergency Evacuation</i> <i>Plan'</i> for the purposes of addressing the policy requirements. Consideration should be given to the Guidelines Section 5.5.4 'Developing a Bushfire Emergency Evacuation Plan'. This contains detail regarding what should be included in a BEEP and will ensure the appropriate content is detailed when finalising the BEEP to the satisfaction of the Shire.	Comment only.

DFES Built Environment Branch Comment

As the proposed building is Class 9b, plans will need to be provided to DFES Built Environment Branch for assessment, as required by Regulation 18b of the *Building Regulations 2012* (as amended). It is noted that as the drawings indicate this building will exceed 500m² total floor area, fire hydrant/hose coverage will need to be provided to this building. From the information available it does not appear that compliant hydrant coverage can be achieved from the existing street verge hydrants, therefore an on-site feed hydrant assembly meeting DFES Operational Requirements and AS2419 may be required.

<u>Recommendation – compliance with acceptable solutions not demonstrated – modifications required</u>

It is critical the bushfire management measures within the BMP are refined to ensure they are accurate and can be implemented to reduce the vulnerability of the development to bushfire. The proposed development has not demonstrated compliance to the following:

 Element 1: Location, Element 2: Siting and Design, and Element 4: Water.

If you require further information, please contact Senior Land Use Planning Officer – Sasha De Britome on telephone number 9395 9703.

Yours sincerely

100

Naomi Mynott DIRECTOR LAND USE PLANNING

20 May 2024



Your ref: F Our ref: E Enquiries J

PA24/188 D24/0266831 Jack Sirett

Chief Executive Officer Shire of Serpentine-Jarrahdale

Email: info@sjshire.wa.gov.au

Attention: Marius Le Grange Statutory Town Planning Planner Coordinator

Dear Marius,

Proposed Childcare Centre – Lot 631, 108 Lawrence Way, Byford

Thank you for your letter dated 8 April 2024 providing the Department of Education (the Department) with the opportunity to comment on the abovementioned proposal.

The proposed Child Day Care Centre is within close proximity of Beenyup Primary School and therefore careful consideration in line with the Western Australian Planning Commission's *Operational Policy 2.4 – Planning for School Sites* (OP 2.4) is to be taken into account. It is imperative to ensure that no adverse impacts would result from the proposal on the school's amenity including traffic congestion during peak periods, compromised parking and access to the school, and the safety of its occupants.

The Department has reviewed the information in support of the proposal and notes that it is generally consistent with the City's Local Planning Framework and relevant Local Planning Policies. Accordingly, the Department has no objections to the proposal subject to the following conditions being imposed as part of the approval:

- A Traffic Management Plan being prepared and adopted as part of planning approval to ensure that all pick-up and drop-off of children associated with the proposed childcare be contained on-site; and
- The establishment of a Construction Management Plan (CMP) to address noise, odour and dust emissions mitigation. The CMP is to include how car parking, delivery vehicles and traffic impacts associated with construction will be managed so as not to jeopardise the safety of the school community, particularly during peak school drop off/pick up times given the anticipated increased trips on Lawrence Way and surrounding roads associated with the proposed development.

Should you have any queries on the above, please contact Jack Sirett, Senior Consultant – Land Planning on (08) 9264 5374, or by email at <u>jack.sirett@education.wa.edu.au</u>.

Yours sincerely,

Ikmal Ahmad Principal Consultant – Land Planning

13 May 2024

PLANNING SOLUTIONS URBAN & REGIONAL PLANNING

Development Application Report

bullercup

Proposed Child Care Centre

Lot 631 (108) Lawrence Way, Byford

Prepared for Buttercups Childcare

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This report has been prepared with particular attention to our Client's instructions and the relevant features of the subject site. Planning Solutions (Aust) Pty Ltd accepts no liability whatsoever for:

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- use of, or reliance upon, this report in relation to any land other than the subject site; or
- the Client's implementation, or application, of the strategies recommended in this report.

Direct all enquiries to:

Planning Solutions

Level 1, 251 St Georges Terrace Perth WA 6000

All correspondence to: Planning Solutions GPO Box 2709 CLOISTERS SQUARE PO WA 6850

Phone:08 9227 7970Fax:08 9227 7971Email:admin@planningsolutions.com.auWeb:planningsolutions.com.au

Project Details

Job number	8009	
Client	Buttercups Childcare	
Prepared by	Planning Solutions	
Consultant Team	Town Planning Drafting and Design Traffic Engineering Landscaping Plan Bushfire Acoustic	Planning Solutions Brown Falconer Urbii Urban Retreat Gardens Ecological Reverberate

Document Control

Revision number	File name	Document date	Prepared by	Checked by
Rev 0	240321 8009 DA Report	21 March 2024	OBe	JW

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Appendix 1: Certificate of Title

Appendix 2: Development plans

Appendix 3: Transport Impact Statement Appendix 4: Environmental Noise Assessment

Appendix 5: Bushfire Management Plan and Bushfire Emergency Evacuation Plan

Appendix 6: Landscaping Plan

Development Application Report – Byford Child Care Centre Lot 631 (108) Lawrence Way, Byford **PS**

1 PRELIMINARY

1.1 Introduction

Planning Solutions acts on behalf of Buttercups Childcare, the operator of the proposed child care centre development at Lot 631 (108) Lawrence Way, Byford (**subject site**).

Planning Solutions has prepared the following report in support of an application for development approval. This report will discuss various matters pertinent to the proposal, including:

- Site details.
- Proposed development.
- Statutory planning framework.

The proposal involves the use and development of a child care centre on the subject site, which will accommodate a maximum of 96 children.

The proposed development seeks to establish an important community facility on the subject site, providing essential urban support services to the current and future residents and workers of Byford and its surrounding suburbs. The proposed development will result in a substantial community benefit through the provision of essential child care services and the generation of local employment opportunities.

The child care centre has been specifically designed to respond to the transitioning character of the area with an attractive, site responsive design and layout.

The proposed development is designed to a high architectural standard and has benefitted from the expert input of traffic, acoustic and landscaping consultants. The development includes environmentally sustainable design features and native landscaping, and encourages alternative modes of transport.

We respectfully request the Metro Outer Development Assessment Panel grant approval to the proposed development.

2 SITE DETAILS

2.1 Land description

Refer to Table 1 below for the lot details and a description of the subject site.

Table 1 - Lot details

Lot	Deposited Plan	Volume	Folio	Area (m²)
631	423330	4030	692	2,304

Refer Appendix 1 for a copy of the Certificate of Title and Deposited Plan.

Development Application Report – Byford Child Care Centre Lot 631 (108) Lawrence Way, Byford PS

2.2 Location

2.2.1 Regional context

The subject site is within the municipality of the Shire of Serpentine Jarrahdale (Shire), approximately 32.5km south east of the Perth city centre and 1.8km south west of the Byford Activity Centre. The subject site adjoins Orton Road at its southern boundary, which provides a direct connection to the Kwinana Freeway to the west and South Western Highway to the west (via Warrington Road and Abernathy Road). The site also adjoins Lawrence Way to the east and Maive Street to the north which provide accessibility to the surrounding residential areas.

2.2.2 Local context, land use and topography

The subject site is within an area of Byford planned for future development and expansion. The subject site comprises of one residential lot which is currently vacant of any development and has a combined area of 2,304m² (refer **Figure 1** below).

The subject site is located within a residential estate named Beenyup Grove, providing new residential lots, and public open space. The residential estate is approximately 75% complete, with the residential lots in the southern portion of the estate yet to be developed. The subject site is located approximately 200m south from the Beenyup Primary School which is also located on Lawrence Way.



PS

Figure 1: Aerial photograph

Development Application Report – Byford Child Care Centre Lot 631 (108) Lawrence Way, Byford PS

3 PROPOSED DEVELOPMENT

3.1 Development Summary

The proposal seeks to develop a single-storey, 96 place child care centre with associated car parking, landscaping and access on the subject site. The child care centre is well positioned in a predominantly single storey residential locality and is within close proximity to a primary school. The scale and form of the proposed child care centre respects the context and character of the locality. The proposed building seeks to address the street frontages through responsible design, reinforcing the residential aesthetic, while allowing for a subtle variation to outline the child care centre and its relative branding.

The proposed centre will provide early learning / child care services for up to 96 children of the following age demographics:

- 20 places for children aged 0-2 years.
- 36 places for children aged 2-3 years.
- 40 places for children aged 4-5 years.

The centre is proposed to operate from 6:30am to 6:30pm, Monday to Friday, and accommodate 16 staff.

The proposal is supported by the following technical reports demonstrating its suitability:

- Transport Impact Statement (TIS) prepared by Urbii, demonstrating there will be minimal impacts on the surrounding road network arising from the proposal, and that the proposed access arrangements are satisfactory from a traffic engineering perspective (refer to Appendix 3).
- Environmental Noise Assessment prepared by Reverberate, demonstrating the proposal will comply with the *Environmental Protection (Noise) Regulations* 1997 (refer to **Appendix 4**).
- A Bushfire Management Plan and Bushfire Emergency Evacuation Plan prepared by Ecological, demonstrating the proposal will comply with State Planning Policy 3.7 Planning in Bushfire Prone Areas (refer **Appendix 5**).
- A Landscaping plan prepared by Urban Retreat Garden Design, depicting the proposed on site and verge landscaping (refer **Appendix 6**).

Specifics of the proposed development and its built form are discussed below.

3.2 Built Form

The proposed child care centre is intended to create a recognisable community focal point, providing an essential service which is accessible to the surrounding residents.

The facility has been designed in a manner consistent with the prevailing residential character of the locality. The domestic building form with a pitched roof, selected soft tones, materials and textures ensure the attractive built form of the facility is sympathetic to its context.

Specifically, the proposed development comprises:

- A single storey child care centre building with a maximum height of 4.79m, with the following setbacks:
 - o Minimum 1.5m setback from Orton Road (southern boundary).
 - o Minimum 6m setback to Lawrence Way (eastern boundary).
 - o Minimum 15m setback to Maive Street (northern boundary).



- Minimum 13.7m setback from the residential property (Lot 441 Orton Road & Lot 466 Maive Street) on the southern boundary.
- Floor-to-ceiling windows along the northern and eastern building elevations to maximise access to natural sunlight within internal activity rooms.
- Openable windows and doors on building elevations to allow natural cross-ventilation.
- The building façades are comprised of high quality materials including axon and matrix panel cladding, powdercoat aluminium, Colorbond, textured paint finishes and glazing. The materials and finishes are consistent with a residential built form typology. The built form is intended to be an attractive addition to the streetscape.
- An outdoor play area in the northern and eastern portions of the site, with a total area of 686m².
- An internal floor layout with the following components:
 - Piazza, reception desk, office, meeting and staff rooms.
 - o Kitchen, pantry store and laundry.
 - Six group activity rooms and associated children's toilets, prep rooms and sleep rooms.
- Boundary fence along the perimeter of the subject site and outdoor play spaces, comprising various materials, design features and heights. Fencing heights and design are reflective of the acoustic recommendations and amenity.
- Substantial landscaping provided along street frontages and throughout the site, including native shade trees, groundcover and verge planting.
- One 6.2m full movement crossover to Maive Street and one 3.5m egress crossover to Cap Road, which connects directly to Orton Road. Ingress and egress has been configured to optimise the functionality and accessibility of the site for both visitors and staff.
- A 20 bay car park situated in the western portion of the subject site, including one ACROD bay.
- Pedestrian access via an entrance foyer at the western elevation, accessible from the car park and the footpath from Orton Road.
- Fully enclosed bin store located at the southern portion of the car park. Waste bins will be wheeled out to the car park for on site waste collection (during non peak periods of operation), as required and based on the needs of the child care centre.

Refer to Appendix 2 for the development plans depicting the proposal.

Refer Figures 2 – 4 below for perspectives of the proposed development.

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Figure 2: North west view of child care centre viewed from the car park.



Figure 3: Corner of Maive Street and Lawrence Way Perspective.



Figure 4: Child care centre entrance as viewed from the car park.

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3.3 Transport

The proposed development and access arrangements are supported by a Transport Impact Statement (TIS) prepared by Urbii. The TIS carries out an assessment in accordance with WAPC guidelines and demonstrates that the trip generation resulting from the proposed facility will have an insignificant impact on the surrounding road network.

The resultant anticipated traffic generation from the proposed development is 78 AM peak hour trips, and 78 PM peak hour trips. The net traffic increase of the child care centre will not increase traffic on the surrounding road network by more than 100 vehicles per hour. In accordance with the WAPC's Transport Impact Assessment Guidelines for Development (2016), a Transport Impact Assessment is therefore not required as the impact on the surrounding road network is insignificant.

The TIS provides the following conclusions:

- The traffic analysis shows that the traffic generation of the proposed development is relatively low, and as such, would have an insignificant impact on the surrounding road network.
- The site features good connectivity via the existing road and path network in the area.
- The provision of 20 on-site car parking bays are deemed sufficient to cater for the needs of the child care centre.
- The car park provides sufficient space for service vehicles to access and egress the subject site at off peak operating times or when closed.

Refer to Appendix 3 for the Transport Impact Statement prepared by Urbii.

3.4 Acoustic

The development site is in proximity to residential properties and adjoins residential properties at its western and boundary. Accordingly, an Environmental Noise Assessment has been conducted by Reverberate.

The assessment considers the noise impacts associated with the proposed child care centre, and demonstrates the proposal will comply with the *Environmental Protection (Noise) Regulations 1997* during operating hours, subject to the following key mitigation measures:

- The outdoor play area is not to be used until after 7:00am (ie. during the day period only).
- Noise control barriers are recommendede2 with the minimum heights shown in Appendix C of the Environmental Noise Assessment.
- Restriction of selected car parking bays, with no parking in them until after 7am. This can be appropriately managed by the child care centre operator.
- The air conditioning condensing units to be installed with "Low Noise" night period modes.

Refer to Appendix 4 for a copy of the Environmental Acoustic Assessment Report prepared by Reverberate.

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3.5 Bushfire

The subject site is located within a designated bushfire prone area in accordance with the Department of Fire and Emergency Services (DFES) Map of Bushfire Prone Areas.

Accordingly, a Bushfire Attack Level Assessment (**BAL**) Report has been prepared by Ecological Australia to demonstrate appropriate bushfire risk management for the proposed development. The subject site has been identified within a range of BAL12.

A Bushfire Management Plan (**BMP**) and Draft Bushfire Emergency Evacuation Plan (**BEEP**) has therefore been prepared to support the proposed development. This reporting demonstrates the proposed use and location of built form is satisfaction to address the necessary bushfire requirements.

Refer Error! Reference source not found., Bushfire Management Plan and Bushfire Emergency Evacuation Plan.

3.6 Landscaping

A Landscaping Plan has been prepared by Urban Retreat Garden Design. Proposed are native species which are resilient and waterwise, consistent with typical types of planting found in the Byford area. Landscaped areas are provided in the Maive Street, Lawrence Way and Orton Road verges to visually soften the development and present attractively to the streetscape. Landscaping is provided within the car parking area, to screen parked vehicles and the bin store. Specifically, the proposed landscaping comprises:

- 64m² of soft landscaping elements on site including:
 - o 8 x native trees
- 152m² of soft landscaping within verge areas including:
 - o 7 x native trees

The Landscaping Plan excludes the 686m² outdoor play area. The outdoor play area design and landscaping will be finalised following tenant negotiations and preparation of more detailed designs.

Refer to Appendix 6 for the Landscaping Plan prepared by Urban Retreat Garden Design.

3.1 Waste management

The development proposes an enclosed bin store at the southern aspect of the car park area. Waste collection will occur through a private contractor chosen by the operator.

Waste collection would occur when the facility is closed or outside of peak operating hours, allowing optimal use of the car park by a service vehicle and ensuring waste collection does not interfere with the operation of the centre.

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4 STATUTORY PLANNING FRAMEWORK

4.1 Metropolitan Region Scheme

Under the provisions of the Metropolitan Region Scheme (**MRS**), the subject site is zoned Urban. The proposed development is consistent with the intent of the Urban zone and may be approved accordingly.

4.2 Shire of Serpentine Jarrahdale Local Planning Scheme No. 3

4.2.1 Zoning

The subject site is zoned 'Urban Development' under the Shire of Serpentine Jarrahdale's Local Planning Scheme No. 3 (LPS3) (refer Figure 5 below).

The objective of the Urban Development zone is:

The purpose of the Urban Development zone is to provide for the orderly planning of large areas of land in a locally integrated manner and within a regional context, whilst retaining flexibility to review planning with changing circumstances.

Relatedly, the Doley Road Precinct Structure Plan (**PSP**) has been prepared for the subject site to guide the future development of the area. The PSP is addressed separately in **section 4.2.2** of this report.

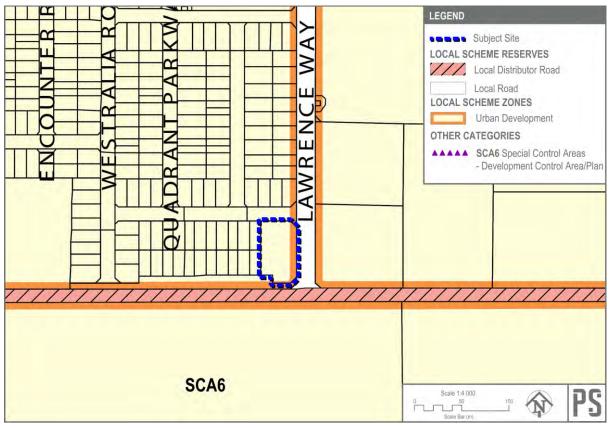


Figure 5: Zoning Map



4.2.2 Doley Road Precinct Local Structure Plan

The Doley Road Precinct Local Structure Plan (**PSP**) was prepared to inform the future subdivision and development of the western part of Byford's townsite within the Shire.

The subject site is designated 'Residential – R40 – R60' under the PSP.

4.2.3 Land use permissibility

The proposed development seeks approval for a child care centre, best classified as a 'Child Care Premises', under LPS3, defined as:

Child Care Premises: means premises where -

- (a) an education and care service as defined in the Education and Care Services National Law (Western Australia) Section 5(1), other than a family day care service as defined in that section, is provided; or
- (b) a child care service as defined in the Child Care Services Act 2007 section 4 is provided.

A Child Care Premises is an 'A' use in the Urban Development and Residential zone and therefore capable of approval the discretion of the local government following advertising.

The proposed use is entirely appropriate and suitable for establishment on the subject site for the following reasons:

- 1. The proposed centre will provide an essential community service to the surrounding locality, catering for the care of up to 96 children and providing opportunities for local employment.
- 2. The proposed centre provides a site-responsive design, utilising the entire 2,304m² of development site area and incorporating built form to integrate within the residential character of the area.
- 3. The proposed development is located on Lawrence Way and will have synergies with Beenyup Primary School, 400m north.
- 4. The proposal is supported by a Transport Impact Statement which demonstrates it is satisfactory from a traffic and access point of view.
- 5. An acoustic assessment has been undertaken, demonstrating the proposal will comply with the *Environmental Protection (Noise) Regulations 1997.*

For the reasons outlined above, the proposed childcare premises is entirely compatible with the Urban Development and Residential zone and warrants approval accordingly.

4.2.4 Development standards and requirements

Schedule 4 - Additional Site and Development Requirements sets out the general developments requirements which apply to land use and development within the Scheme area. Refer to **Table 2** below for an assessment against the relevant provisions of Schedule 4.

Table 2 - Assessment against the relevant development requirements of LPS3

Requirement	Provided	Compliance
4.3 - Car Parking Requirements		
All parking areas shall be designed and constructed in accordance with relevant Australian Standards.	The proposed vehicle parking is compliant with the Australian Standards.	\checkmark
All external parking areas shall include shade trees at the rate of 1 tree per 4 parking	20 car parking bays are provided. * 8 trees are provided within the car parking area.	\checkmark

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bays or 1 tree every 12 metres, whichever is the lesser.			
4.4 - Bicycle Parking and Facilities			
 Where end of trip bicycle facilities are required under this Scheme, the following shall be provided at a minimum: (a) one (1) shower for the first five (5) bicycle spaces or part thereof, plus an additional shower for each ten (10) bicycle parking spaces thereafter; and (b) one (1) change room or direct access to a communal change room per shower; and (c) one (1) secure equipment locker per bicycle parking space. 	3 bicycle racks are provided.	✓	

Having regard to **Table 2** above, the proposal largely complies with the development requirements of LPS3 and warrants approval accordingly.

4.2.5 Parking

Table 3 below provides an assessment of the proposed car parking against the requirements of LPS3.

Land use	Parking standard	Required car bays	Provided
Child Care Premises	1 per 10 children accommodated under maximum occupancy and 1 bay per employee* with a minimum of 3 spaces. *1 bay per employee means 1 bay for each of the maximum number of employees on the premises at any given time.	1 bay for every 10 children = 9.6 bays. 1 bay per employee = 16 bays.	20 car bays (including ACROD bay)
Total		Total bays required: 26	Total bays provided: 20

Justification

As demonstrated in the TIS, the car parking layout and supply for the proposed childcare is considered appropriate. Detailed analysis has been undertaken to determine the actual need for car parking on the site. As detailed within the TIS, the average length of stay for drop-offs to be 6.8 minutes. The Poisson Distribution modelling shows that in any 7-minute period during the peak hour, the number of pick-ups/drop-offs within the car park will be 8 vehicles or less. Outside of peak hours the demand for visitor parking will be much lower thus the proposed 20 car parking bays will be sufficient.

The Byford Rail Extension and Byford Rail Station once complete will result in additional bus servicing within the locality to connect to the train station. In the medium to long term, buss accessibility for the proposed development is expected to improve. Additionally, the subject site is 200m south of Beenyup Primary School.

Refer to Appendix 3 for a copy of the Transport Impact Statement prepared by Urbii.

Further, the WAPC Draft Position Statement: Child Care premises states 'Generally, the minimum car parking requirement for a child care premises, including staff and visitor parking, will be one space per five children.' When considering this car parking ratio, the proposed development would only generate the need for 19 car bays.

Ultimately, the adequacy of the proposed car parking is demonstrated and the minor shortfall justifiable warranting approval.



4.2.6 Matters to be considered

Clause 67(2) of the Deemed Provisions sets out the matters for which due regard is to be given when considering a development application. Refer **Table 4** - Matters to be considered below for an assessment of the relevant matters.

Tubi		
Ma	itter to be considered	Provided
(a)	the aims and provisions of this Scheme and any other local planning scheme operating within the Scheme area;	The aims and provisions of LPS3 are addressed in this report.
(b)	the requirements of orderly and proper planning including any proposed local planning scheme or amendment to this Scheme that has been advertised under the Planning and Development (Local Planning Schemes) Regulations 2015 or any other proposed planning instrument that the local government is seriously considering adopting or approving;	There are no known scheme amendments to LPS3 that would affect the merits of this proposal.
(c)	any approved State planning policy	The relevant State Planning Policies are addressed in section 5 of this report.
(g)	any local planning policy for the Scheme area;	Relevant local planning policies are considered in section 4.4 of this report.
(m)) the compatibility of the development with its setting including the relationship of the development to development on adjoining land or on other land in the locality including, but not limited to, the likely effect of the height, bulk, scale, orientation, and appearance of the development;	Strong emphasis has been placed on the design of the building, ensuring the built form responds to the prevailing residential character of the locality, while making a positive built form contribution to the streetscape. The proposed building incorporates domestic styled materials and design features including a pitched roof, soft tones, textures and materials to maintain a high level of similarity with the established residential character of the area. The proposed building is single storey, consistent with adjoining residential properties.
		The proposed parking area comprises landscaping with shade trees to minimise/soften any perceived visual impacts. Increased landscaping is also provided north of the car park (within the verge) to further mitigate any visual impacts. The end result is a child care facility which presents well to the surrounding locality and achieves a good design outcome. Overall, the scale, height, orientation and appearance of the development is consistent with the character of the locality.
(n)	the amenity of the locality including the following – (i) environmental impacts of the development; (ii) the character of the locality; (iii) social impacts of the development;	As detailed above, the proposed development responds to the character of the area through a range of design features. It has been demonstrated in the Environmental Noise Assessment the proposal will not affect the amenity of the adjacent residential properties. In this regard, noise generated by the proposed development will comply at all times with the Environmental Protection (Noise) Regulations 1997.



Matter to be considered	Provided
	There will be no detrimental social impact resulting from the proposed development. Conversely, the proposal will result in positive social impacts to the locality, through the creation of 16 jobs and provide essential early learning services for families, further enhancing opportunities for employment.
(p) whether adequate provision has been made for the landscaping of the land to which the application relates and whether any trees or other vegetation on the land should be preserved;	 The proposed development incorporates the following landscaping: The provision of native groundcover species throughout the development and adjacent verges. 8 trees provided on site and 7 more within the verge. The proposed landscaping arrangements are considered to be more than adequate for the purpose of the proposal.
 (s) the adequacy of – (i) the proposed means of access to and egress from the site; and (ii) arrangements for the loading, unloading, manoeuvring and parking of vehicles; 	A TIS has been prepared to address traffic/access considerations, confirming the proposed development is entirely suitable in this regard.
 (t) the amount of traffic likely to be generated by the development, particularly in relation to the capacity of the road system in the locality and the probable effect on traffic flow and safety; 	Refer to Appendix 3 for a copy of the Transport Impact Statement prepared by Urbii.
 (u) the availability and adequacy for the development of the following – (i) public transport services; (ii) public utility services; (iii) storage, management and collection of waste; (iv) access for pedestrians and cyclists (including end of trip storage, toilet and shower facilities); (v) access by older people and people with disability; 	 i. Availability of transport options near the subject site is addressed in the supporting TIS (refer Appendix 3). ii. The subject site has access to all the required utility services prior to commencement of development (ie. following subdivision conditions clearance). iii. The details of the storage and collection of waste are provided within this report. iv. The development is accessible to pedestrians and cyclists through provision of a pedestrian accessway from Lawrence Way and Cap Street to the main entry. v. One universally accessible car parking space has been
 (v) the potential loss of any community service or benefit resulting from the development other than potential loss that may result from economic competition between new and existing businesses; 	provided for the proposed development. The proposed child care centre will provide full-time employment and provide essential early learning services for up to 96 children, meeting demand for such urban support services in the area. The facility will also enhance employment opportunities for residents in the wider locality through the provision of such services.
 (w) the history of the site where the development is to be located; 	The history of the site for residential purposes has been considered in the design of the proposed child care centre.
 (x) the impact of the development on the community as a whole notwithstanding the impact of the development on particular individuals; 	In this respect, there is a clear and demonstrable positive social outcome resulting from this development. The application is supported by traffic and acoustic reporting, demonstrating the proposal will have no adverse impact on the amenity of the surrounding area.
(y) any submissions received on the application;	Any submissions will be considered during public advertising of the application.

The proposal meets the relevant matters to be considered, warranting approval.



4.3 Beenyup Grove Local Development Plan

The Beenyup Grove Local Development Plan (LDP) was prepared to inform the future subdivision and development of the residential portion of Beenyup Grove within the suburb of Byford.

The LDP provides provisions around the street scape, setbacks and open space. An assessment against the relevant provisions is detailed below in **Table 5**.

4.3.1 Development Requirements

The LDP provides general provisions for the land within the LDP area. **Table 5** provides an assessment against the general development standards and key development provisions as per the 'Residential – R60' designation prescribed by the LDP.

Table 5 - Assessment against relevant de	evelopment requirements of LDP
Table 5 " Assessment against relevant ut	evelopment requirements of LDP

Requirement	Provided	Compliance		
Streetscape Requirements	Streetscape Requirements			
Primary Street Setback - 2m Secondary Street Setback - 1m	6m to Primary Street (Lawrence Way). 15m to Secondary Steet (Maive Street). 1.5m to Secondary Street (Orton Road).	1		
Boundary Setback Requirements				
 Buildings built to both side boundaries are permitted Walls not higher than 3.5m, with an average height of 3.0m or less. 	Fences above 3m tall are not proposed.	✓		
Open Space Provisions				
Minimum open space - 30%	The proposal provides 60% open space.	1		
Landscaping				
The front setback area, excluding the area of any driveway, verandah or porch, shall consist of at least 40% soft landscaping.	The development proposes over 40% soft landscaping at front setback area.	~		

As shown in **Table 5** above, the proposed development is generally compliant with all the relevant development requirements of the LDP. The proposal warrants approval accordingly.

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4.4 Local Planning Policies

An assessment of the proposed child care centre against the relevant Local Planning Policies is provided below.

4.4.1 Local Planning Policy 1.6 – Public Art

Local Planning Policy 1.6 – Public Art (LPP1.6) prescribes the need for public art contribution that will be required in larger scale developments to improve and enhance the wellbeing of people in the environments where they live, work and play by. The proposed development meets the criteria of LPP1.6 as it has a proposed construction cost between \$1,000,000 - \$50,000,000.

The contribution required states that:

Public art with a minimum cost of 1% of construction cost; or 1% of construction cost contributed to the public art fund.

A public art contribution can be imposed as a suitably worded condition of approval.

4.4.2 Local Planning Policy 2.3 - Development Standards for Development Applications

Local Planning Policy 2.3 – Development Standards for Development Applications (LPP2.3) establishes a minimum standard for development to maintain and enhance the amenity and natural environment, and ensures high quality landscaping will be established, identified and preserved where possible. Table 6 below provides an assessment against the relevant provisions of LPP2.3.

Table 6 - Assessment against the relevant requirements of LPP2.3

Requirement	Provided	Compliance
Landscaping and Revegetation		
Revegetation is required to replace mature native vegetation that is proposed to be lost as a result of any development / planning application throughout the Shire.	The site is currently vacant of any vegetation. 15 trees will be planted as part of the development.	1
Where landscaping is required, plants identified as pest plans by the Shire and listed in Schedule 1 of this Policy, are not permitted to be retained or established.	No pest plants are proposed. The species proposed are outlined in the landscaping plan in Appendix 6 .	\checkmark
Where landscaping is proposed within the road verge, a deed of agreement prepared by the Shire's solicitors at the applicants cost, which include lodgement of a caveat on title, is to be prepared and executed prior to the development being occupied. The deed is to include that the owner agrees to maintain the landscaping within the road verge.	Noted.	✓
 All landscaping plans submitted to the Shire must be drawn to scale and detail the following: a) The location and type of existing trees and plantings, including genus species name and whether they are to be retained. b) The location and type of new trees and shrubs that are proposed to be installed as part of the landscaping including genus species name. c) Any lawns, paths, hardscaping or other features to be established including construction materials to be used (i.e. brick paving, concrete). d) Any natural landscape areas to be retained. 	Noted. Refer to Appendix 6 for a copy of the development plans that include a detailed landscaping plan.	*

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e) Those areas to be reticulated or irrigated including details on the type of reticulation.		
To allow establishment of landscaping around existing trees and tree trunks adequate space depended upon the species should be maintained and kept clear of all impervious materials. Where a tree is positioned within 3m of less from a hardscape area, root control barriers should be installed.	All trees will have sufficient space to establish roots, with no control barriers implemented.	*
Landscaping treatments should aim to minimise water use through soil improvement and mulching to retain moisture, use of indigenous, native landscaping; installation of smart irrigation systems including monitors, controllers and subsurface irrigation.	Noted. Landscaping will aim to minimise water use through selecting native species. Specific details pertaining to irrigation will be provided during the detailed design stage.	*
The Local Natural Areas identified in the Shire's Local Biodiversity Strategy have both landscape and biodiversity values and will be retained and protected where possible.	The subject site does not contain any Local Natural Areas.	4
Drainage		
 Where development has been proposed in an area where the lots grade to the road and the downstream system is designed with adequate capacity the following must be achieved: a) Flow across paved areas to road/drain or legal point of discharge; b) All plans submitted for approval to show existing and proposed levels, and flow paths. c) Contain the first 15mm at source for retention or detention and slow release to downstream environment, based on soil conditions 	Stormwater management can be addressed through a suitably worded condition of approval.	٢
During construction, measures should be implemented to ensure no discharge of dust or sediment from the site.	Construction management can be addressed through a suitably worded condition of approval.	r

Having regard to **Table 6** above, the proposal is consistent with the relevant development requirements of LPP2.3 and warrants approval accordingly.

4.4.3 Local Planning Policy 4.11 – Advertising

The Shire's Local Planning Policy 4.11 – Advertising (LPP4.11) provides a planning framework for the appropriate development of signage on private and public land, to ensure that public safety is maintained and to ensure that the character and amenity of the area where signage may be proposed is maintained. Table 1: Sign Permissibility outlines the permissibility of each sign type against the zone that it is located in. Wall signs are zoned "X" within the urban development and Residential zone, meaning they are not permitted.

It is considered necessary to have appropriate advertising on the proposed child care centre as it is a commercial land use that must be recognisable by the public. The proposed signage has been designed to integrate with the building and is of size that does not compromise the residential amenity of the area.

The proposed signage comprises:

- 1 x 4m x 0.9m "Buttercups Building Brighter Futures" wall sign located on the Maive Street frontage.
- 5 x 3.5m x 0.9m "Buttercups Building Brighter Futures" boundary fence signs.
 - o 1 x located on Maive Street.



- o 2 x located on Lawrence Way.
- o 2 x Orton Road.
- 1 x 2.7m x 0.8m "Buttercups" boundary fence sign located at the Maive Street crossover.

Table 7 below provides an assessment against Table 2 of LPP4.11.

Table 7 - Assessment against the provisions of LPP4.11

Requirement	Comment	Complies	
Wall Sign			
A wall sign is to only to display the name, logo or slogan of the business premises to which the sign is applied.	The proposed signage only displays the name of the tenant.	✓	
The maximum single face area is 10m2 , and must not extend beyond 12.0m above the ground even if the wall is higher than this.	The proposed signage is approximately 3m ² in face area and 4.6m above the ground.	✓	
Must not project more than 300mm from the wall and/or fascia to which it is affixed.	The proposed signage does not project more than 300m from the wall.	✓	
Must not project beyond the edges of a wall and/or fascia.	The proposed signage does not project beyond the edges of the walls.	✓	
A wall sign, which extends above a wall, may be considered as a roof sign.	The proposed signage does not extend above any walls.	1	
Boundary Fence Sign			
A boundary fence sign is not to be affixed to a fence unless the fence is constructed to withstand the consequent wind or other loads.	A fences are capable of holding the proposed signage.	√	
Is a single faced sign.	All signage is single sided.	1	
The maximum sign face area is 36m2 .	No single sign exceeds 10m ² in face area.	✓	

The proposal is consistent with the provisions of LPP4.9 and warrants approval.

4.4.4 Local Planning Policy 4.24 – Child Minding Centres

The Shire's Local Planning Policy 4.24 – Child Minding Centres (LPP4.24) provides guidance for the location of child minding centres to best take advantage of the surrounding natural environment and provide a compatible setting with the locality.

Table 8 below provides an assessment of the proposed child care centre against the provisions of LPP4.24.

Table 8 - Assessment against the provisions of LPP4.24

Requirement - Acceptable Development	Comment	Complies
Location		
Child minding centres located within easy walking distance of activity centre or recreational nodes. Located within a walkable catchment for the local neighbourhood.	The proposed childcare centre is located within a walkable catchment area for the residential area to the north west of the subject site.	~



Requirement - Acceptable Development	Comment	Complies
Larger child minding centres being encouraged to locate near or within activity centres.		complies
The location is close to or adjoins public open space	The proposed child care centre is 130m from Beenyup Primary School to the north and 240m from public open space, also located to the north.	√
Child minding centres are adequately separated from any incompatible nearby uses, with this supported by a suitably qualified risk assessment forming part of an application. Such risk assessment is to consider elements such as dangerous goods, hazardous materials and public health considerations. Potentially incompatible uses (taking into account design and layout) may include, for example, outlets selling petroleum, fast-food, and alcohol or tobacco products.	The proposed child care centre is adequately separated from incompatible uses.	V
Parking		
Parking meets the requirements of the Local Planning Scheme, and demonstrates how this meets the operational aspects of the development.	The proposed car parking layout meets the requirements of LPS2. Refer to the TIS prepared by Urbii at Appendix 3 for further detail on the proposed parking.	✓
Landscaped parking areas in accordance with the Local Planning Scheme.	There are no landscaping requirements within LPS3. Refer to Appendix 6 for a copy of the Landscaping Plan prepared by Urban Retreat Garden Designs.	✓
Parking areas located so as to provide a separation between surrounding dwellings and outdoor play spaces.	The parking area is proposed to be on the western portion of the site to create a satisfactory separation to the future residential properties to the west. The outdoor play area front Lawrence Way and has a significant setback from the lot to the east. Refer to Appendix 4 for a copy of the Environmental Noise Assessment prepared by Reverberate.	✓
Traffic		
Traffic generation poses an increase of no more than 10% of the current recorded daily volumes on the roads which the development adjoins. This is confirmed by a traffic impact statement.	As demonstrated within the TIS, the forecast increase in traffic is marginal and the impact on the surrounding road network insignificant. Refer to Appendix 3 for a copy of the Transport Impact Statement prepared by Urbii.	~
Development facilitates full movement access to and egress from the site.	Full movement access and egress and is provide from the site. Refer to Appendix 3 for a copy of the Transport Impact Statement prepared by Urbii. Painted arrow markings and signage will be installed to guide traffic movements. A "NO ENTRY" sign will be installed at the exit crossover.	✓
Infrastructure Requirements		
Designated pedestrian footpaths from the street to the centre and the car park to the centre.	Designated footpaths are provided from the street and car park to the entrance of the centre.	✓
Car parking visible from the street to discourage verge parking.	The car parking area is visible from Orton Road and Maive Street.	√
Amenity		



Requirement - Acceptable Development	Comment	Complies
Outdoor play areas located in a safe place within the site, providing adequate shade, and separated from noise sensitive premises.	The outdoor play area front Lawrence Way and has a significant setback from the lot to the east. Refer to Appendix 4 for a copy of the Environmental Noise Assessment prepared by Reverberate.	√
Setbacks to side and rear boundaries and the orientation of openings to indoor play areas located to minimise noise impacts.	The proposed child care centre has been designed to minimize the noise impact on surrounding land uses. Refer to Appendix 4 for a copy of the Environmental Noise Assessment prepared by Reverberate.	√
Waste service areas appropriately screened from public areas.	The bin storage area and service area is appropriately screened from public areas.	\checkmark
Acoustic impact assessment submitted demonstrates how noise will be managed, particularly from: - Indoor and outdoor play areas; - Car parking areas and the impulsive noise that comes from car access (especially staff arriving before opening and departing after closure), opening and closing of car doors, arrangement of car parking bays (staff versus visitor).	Noted. Refer to Appendix 4 for a copy of the Environmental Noise Assessment prepared by Reverberate.	4
Hours of operation 7:00am to 7:00pm Monday to Friday.	The child care centre is proposed to be operating from 6:30 am – 6:30 pm. This allows parents to drop their children at the child care centre on their way to work. The noise generated at that time will be mitigated through a restriction on the use of car parking adjacent the residential area and restriction of outdoor play before 7am.	VARIATION
Child minding centres are not subject to unacceptable noise that could impact the health and wellbeing of children.	Noted. The subject site is in an area of residential nature.	✓
Sites in residential areas greater than 1000m2 in areas.	The subject site is 2,304m2	√
A maximum site coverage of 60%, in order to mimic typical residential form and to provide future ability to recede back to a residential development should that occur.	The proposed child care centre has a site coverage of 32%.	*
Landscaping		
On site landscaping and landscape of all adjoining verge areas, in accordance with the Scheme, to provide an attractive setting and contribute to the streetscape.	Refer to Appendix 6 for a copy of the Landscaping Plan prepared by Urban Retreat Garden Designs	✓
Design		
Development has the appearance of natural materials i.e recycled clay face brick, vertical and horizontal patterns of timber cladding, rammed earth construction, earth block features, natural stone elements for columns, sheltering gable roof.	The proposed child care centre is utilizing vertical cladding, masonry fencing and a gable roof to ensure the development has a "natural look" and matches the residential context of the surrounding properties.	*



Requirement - Acceptable Development	Comment	Complies
Measures should be taken to ensure that play areas are large enough and of such dimensions to be useful as play areas and positive outdoor space. Side setback and leftover building areas are not included for such purpose.	The proposed development has a play space of 686m2 that is made up of two large areas to the north and east of the subject site.	~

The proposal is generally consistent with the provisions of LPP4.24 and warrants approval accordingly.

4.5 State Planning Policies

4.5.1 State Planning Policy 3.7 Planning in Bushfire Prone Areas

The majority of the subject site is located within a designated bushfire prone area in accordance with the Department of Fire and Emergency Services (**DFES**) Map of Bushfire Prone Areas.

Accordingly, a Bushfire Attack Level Assessment (**BAL**) Report has been prepared by Ecological Australia to demonstrate appropriate bushfire risk management for the proposed development. The subject site has been identified with a BAL rating of BAL12.5.

A Bushfire Management Plan (**BMP**) and Bushfire Emergency Evacuation Plan (**BEEP**) has therefore been prepared to support the proposed development. This reporting demonstrates the proposed use and location of built form is satisfaction to address the necessary bushfire requirements.

Refer Appendix 5 for a copy of the Bushfire Management Plan and Bushfire Emergency Evacuation Plan.

4.5.2 State Planning Policy 7.0 - Design of the Built Environment

State Planning Policy 7.0 Design of the Built Environment (**SPP7**) establishes a set of ten 'Design Principles', providing a consistent framework to guide the design, review and decision-making process for planning proposals. **Table 9** provides an assessment against the ten design principles of SPP7.

Table 9 - Assessment against Schedule 1 – Design Principles of SPP 7

Design Principle	Proposed Development Response
1. Context and character	• The proposed child care centre is located within the suburb of Byford. The child care centre is located in close proximity to an existing primary school and existing future residential land uses.
	• The locality is predominantly residential in context and character, with the subject site surrounded by single storey residential and rural lots.
	• The proposed facility has been designed with numerous domestic design features and integrates with the surrounding suburban context, while maintaining a distinct community/institutional feel for individual character and identification purposes. The development maintains congruity with the scale and height of existing residential dwellings forming the locality. The proposed development has been designed to be sympathetic with the surrounding residential developments, while interacting with the street frontages, to create a development connected to the surrounding context.
2. Landscape quality	• Extensive landscaping and trees are proposed adjacent to the car park, to provide attractive screening to the streetscape and shade for parked cars. Landscaping comprises 64m ² of soft landscaping, 8 x native tree and 152m ² of soft landscaping within the verge areas including 7 x native trees. Refer to Appendix 6 for the

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Design Principle

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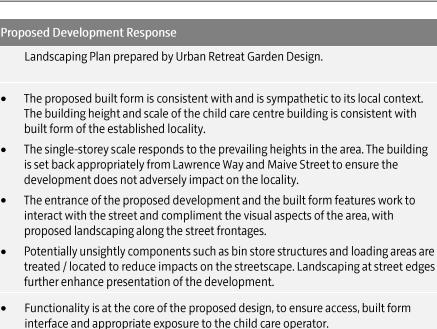
Built form and scale

Functionality

build quality

Sustainability

6. Amenity



The facility is designed in compliance with the National Childcare Regulations which require a baseline level of functionality and build quality to be achieved for child care facilities.

The facility will be constructed to a high standard with quality materials which are intended to last the full life-cycle of the development and require minimal maintenance, allowing educators to focus on providing childcare services.

Landscape planting comprises native species which are climatised to the area and suited to the soil types of Byford, with screen planting proposed to the west of the development along the lot boundary.

The proposed crossovers to Maive Street and Cap Road ensures the site results in a logical traffic flow of vehicles.

In terms of social and economic impact, the proposed child care premises is likely to result in significant net benefits as it will:

0 Actively contribute to meeting the demand for childcare places in the area:

Facilitate the establishment of a new business; and 0

Create direct and indirect employment opportunities. 0

From an environmental point of view, the building includes various design features which would reduce dependency on resources, including a north-facing activity space, east-west facing full height windows and large openings providing crossventilation, high quality internal fixtures with longevity, etc.

The proposed development contains landscaped areas to enable suitable planting of low, medium and higher scale plants/trees. This will aid providing greater shade to the car park and outdoor play area.

The achievement of a high level of amenity for children, nearby residents, visitors and staff have been central to the design of the child care centre.

Amenity for users has been enhanced through the provision of spacious internal rooms and outdoor play area, easy pedestrian access, accessible vehicle parking, high-quality landscaping and the location of the waste storage area within the car park (which is screened by landscaping).



Design Principle	Proposed Development Response
	• The amenity of the neighbourhood has been considered through the use of a residential building design, a sympathetic scale of built form, various built form treatments and the use of landscaping to soften the interface.
	 The proposed child care centre has been carefully designed to reflect the residential character of the locality.
	• The development application is supported by a range of expert consultant reports demonstrating the suitability of traffic / servicing, acoustic management, and landscaping arrangements to ensure the amenity of the locality is preserved and supported by the proposed development.
7. Legibility	• The proposed child care centre provides clear and legible vehicle access via Maive Street which directs staff and patrons to the car park.
	• The proposal is a clear and attractive feature on the corner of Lawrence Way and Orton Road.
	• A defined pedestrian path offers pedestrian access from the street and the parking area to the entrance of the building to ensure universal ease of movement and safe navigation throughout the site.
	• The signage is a recognisable feature of the facility which will reinforce its role as a community focal point and draw patrons to the entry.
8. Safety	• The facility will be constructed in accordance with regulatory standards which optimise safety and security for occupants.
	• The child care centre will allow for passive surveillance to the streetscapes.
	• The car park is of a suitable size and configuration, and is compliant with relevant Australian Standards to ensure safe and proper interaction between pedestrians and vehicles.
9. Community	• The child care centre will be a community focal point. Local families will be likely to place their children in the centre and are likely to interact on a daily basis as a result of this. The development will facilitate passive social interaction by providing services that m any members of the community will use.
	• It is likely the community fabric will be strengthened as a result of the centre being established. There are also expected to be synergies with local schools, where families may have children attending the child care centre.
10. Aesthetics	• The location of the child care centre appropriately addresses the three street frontages.
	• The potentially unsightly areas (i.e. bin stores) are given design attention through materiality and treatment to ensure they do not detract from the value of the locality and are located in areas less visible from the adjoining roads.

Having regard to **Table 9**, the proposed development is largely consistent with SPP7.0 and warrants approval.

PS

5 CONCLUSION

This application seeks development approval for a Child Care Centre on the subject site. The proposed development is generally consistent with the applicable planning framework. The proposed development warrants approval for the following reasons:

- 1. The proposed development will provide increased community services and amenity to residents and workers of the surrounding locality.
- 2. The proposed development is site responsive, complementing the residential character of the locality and adjoining residential properties.
- 3. The design of the proposed development is of an appropriate bulk and scale, with high-quality, contemporary materials, resulting in a quality built form outcome.
- 4. Substantial areas of high quality landscaping are proposed.
- 5. The proposed development is situated in close proximity to open space and local places of employment.

The proposed development has substantial merit and warrants approval. We therefore respectfully request the Metro Outer Joint Development Assessment Panel grant approval to the application.



Lot 631 (108) Lawrence Way, Byford Proposed Child Care Centre

TRANSPORT IMPACT STATEMENT









Prepared for: Planning Solutions

March 2024

Lot 631 (108) Lawrence Way, Byford

Prepared for:	Planning Solutions
Prepared by:	Paul Ghantous
Date:	12 March 2024
Project number:	U22.128

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1 Introduction

This Transport Impact Statement has been prepared by Urbii on behalf of Planning Solutions with regards to the proposed child care centre, located at Lot 631 (108) Lawrence Way, Byford.

The subject site is situated on the north-west corner of Lawrence Way and Orton Road, as shown in Figure 1. The site is presently vacant and is surrounded by mostly vacant residential land which is under development. Beenyup Primary School is located nearby to the north.

It is proposed to develop the site into a child care centre catering for up to 96 children and around 16 staff.

The key issues that will be addressed in this report include the traffic generation and distribution of the proposed development, access and egress movement patterns, car parking and access to the site for alternative modes of transportation.



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Figure 1: Subject site location

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2 Proposed development

The proposal for the subject site is for a child care centre comprising:

- A child care centre with rooms allocated to different age groups;
- Outdoor play area;
- 20 onsite car parking bays, including one ACROD bay;
- Bicycle parking for six bicycles;
- End of trip facilities including lockers, a shower and change room; and
- Bin store.

Vehicle access to the site is proposed to be via one full-movement crossover on Maive Street and one exit only crossover on a service road running parallel with and connecting to Orton Road. The service road is known as Cap Road.

People walking and cycling will access the development from the external path network abutting the site.

The proposed development plans are included for reference in Appendix A.

3 Vehicle access and parking

3.1 Existing vehicle access

There is no vehicle access currently servicing the site. The site is a vacant Lot. A service road presently runs along the southern boundary of the site. The service road connects to Orton Road and provides convenient vehicle access for properties facing Orton Road.

3.2 Proposed vehicle access

Vehicle access for the child care centre is proposed to be via one full-movement crossover on Maive Street and one exit only crossover on the service road running parallel with Orton Road. The interim access arrangement is shown in Figure 2. The future access arrangement (after planned modifications on Orton Road by others) is shown in Figure 3.

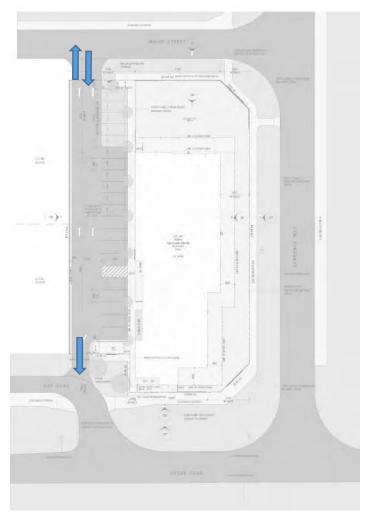


Figure 2: Proposed development vehicle access (interim)

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Figure 3: Proposed development vehicle access (future)

Painted arrow markings and signage will be installed to guide traffic movements. A "NO ENTRY" sign will be installed at the exit crossover.

3.3 Car parking layout

Dimensions of car parking aisles and bays are compliant with AS2890.1. Onsite bays allocated for staff use only are 2.4m wide by 5.4m long. Visitor bays are 2.6m wide. An aisle width of 6.2m has been provided. The ACROD bay is designed to AS2890.6 with a shared space and bollard.

3.4 Parking requirements

The Shire of Serpentine Jarrahdale *Town Planning Scheme* requires the following car parking provision for "child care premises":

• 1 bay per 10 children and 1 bay per employee with a minimum of 3 spaces.

Application of the above rates results in a planning requirement of **26 bays**. A total of 20 car parking bays are provided onsite, which is an 'on-paper shortfall'. The planning assessment of car parking provided to Urbii is presented in Table 1.

Table 1: Shire parking requirement for the proposed development

Land use	Parking standard	Required car bays	Provided
Child Care Premises	1 space per 10 children accommodated under maximum occupancy and 1 bay per employee with a minimum of 3 spaces.	1 space per 10 children = 9.6 (10) spaces 1 space per employee = 16	20 car bays (including ACROD bay)
Total		Total bays required: 26	Total bays provided: 20

Source: Planning Solutions

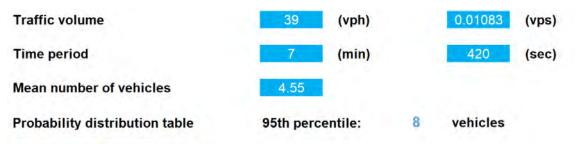


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3.5 Pick-up / drop-off parking

Modelling was undertaken to estimate the demand for children's pick-up/drop-off parking. As detailed in Section 6 of this report, the peak inbound traffic for children's drop-off is estimated to be 39 cars in a 60-minute period. The RTA NSW *Guide to Traffic Generating Developments*, surveyed the average length of stay for drop-offs to be 6.8 minutes.

For conservative analysis, it was assumed that the average length of stay would be 7 minutes. The Poisson Distribution modelling presented in Figure 4 shows that in any 7-minute period during the peak hour, the 95th percentile number of pick-ups/drop-offs within the car park will be **8 vehicles or less**. Outside of peak hours the demand for visitor parking will be much lower.



(X)	p(x)	P(x)
1	0.04808	0.05865
2	0.10938	0.16803
3	0.1659	0.33393
4	0.18871	0.52264
5	0.17173	0.69437
6	0.13023	0.82459
7	0.08465	0.90924
8	0.04814	0.95738
9	0.02434	0.98172
10	0.01107	0.99279
11	0.00458	0.99737
12	0.00174	0.99911
13	0.00061	0.99972
14	0.0002	0.99992
15	6E-05	0.99998
16	1.7E-05	0,99999
17	4.6E-06	1
18	1.2E-06	1
19	2.8E-07	1
20	6.3E-08	1

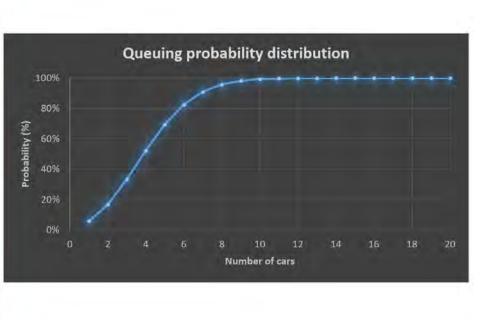


Figure 4: Probability analysis for children's drop-off/pick-up

3.6 Recommended parking allocation

It is proposed to provide a total of 20 car parking bays for the child care centre. This includes one ACROD bay. The following allocation is recommended, based on the parking analysis undertaken in this section of the TIS:

- Maximum 12 car bays reserved for staff onsite.
- Minimum 8 visitor car parking bays reserved for pick-up and drop-off onsite.

It is recommended that the onsite visitor car parking bays have time restriction signage installed "P5min" parking (5 minutes) applicable Monday to Friday between 6:30am to 9:30am and 3:00pm to 6:00pm.

The proposed development plan shows 8 bays are reserved for by visitors. Up to 12 bays can be used for staff parking (including the ACROD bay). 12 bays used for staff parking represents a target mode share of 75% for car drivers. The remaining 25% of staff will travel by walking, cycling, public transport, rideshare or drop-off. This target mode share is reasonable for the planned land use. For example, 69.9% of workers in the Shire travel by car¹.

Five of the staff parking bays will not be used before 7:00am, for acoustic impact mitigation.

3.7 Parking demand management

The analysis presented in this report indicates that there will be enough car parking supply to meet the needs of the development. However, should there be a need to manage car parking demand in the future, several strategies can be considered.

A sustainable transport network should prioritise active and sustainable modes of transport, with walking, cycling, public transport, car sharing, and then single occupancy cars ranked in order of priority (Figure 5).

¹ <u>https://economy.id.com.au/serpentine-jarrahdale/workers-key-statistics</u>







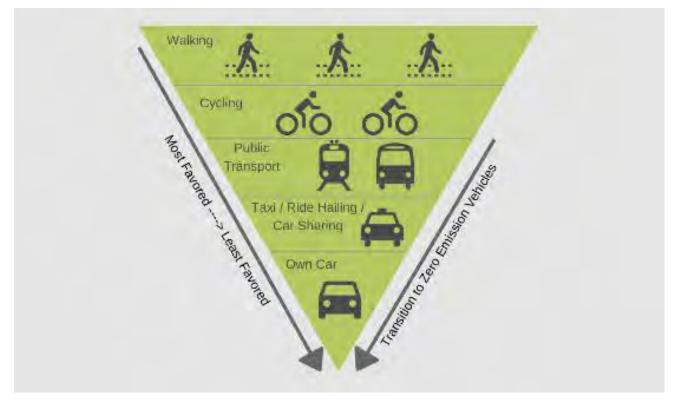


Figure 5: Sustainable transport hierarchy

Some strategies which can be considered for promoting sustainable transport and lowering demand for car parking may include, but are not limited to:

- Running healthy, active transport campaigns and promotions in the workplace. For example, tracking walking and active transport and offering prizes or other incentives for participants.
- Educating staff on public transport, walking and cycling travel options as part of training and recruitment.
- Offering subsidies or other incentives for using public transport.
- Monitoring and maintaining bicycle parking to ensure enough parking is provided and is maintained in good condition.
- Providing free charging stations for micro-mobility vehicles such as e-scooters and e-bikes.
- Implementing a car-pooling register for staff to match-up and car pool together. This can also be incentivised by issuing car-pooling badges for display on the dashboard and providing allocated priority car-pooling parking bays within the site.
- Offer tele-commuting work opportunities for staff who can complete work duties remotely, for example administrative staff.
- Staggering staff start and finish times so that peak staff numbers are rostered between 9:30am and 3:00pm, outside the peak times for drop-off and pick-up of children.

4 Provision for service vehicles

The proposed development will not generate significant service vehicle traffic. It is recommended that smaller vehicles such as vans or utes be utilised for deliveries to the site. These smaller vehicles can park in a car parking bay for a brief time during 'off-peak' periods.

Waste collection is proposed to be facilitated internally, so trucks will enter the site in forward gear from Maive Street, stop in the car park to collect waste, then exit the site in forward gear via the service road to the south. Waste collection will be scheduled outside of the peak activity hours of the facility.

The swept path analysis is presented in Appendix B, and confirms that there is satisfactory geometry for waste truck access and manoeuvring.





5 Hours of operation

The RTA NSW *Guide to Traffic Generating Developments* indicates that pre-school centres typically have peaks in the periods 8:00am to 9:00am and 2:30pm to 4:00pm.

6 Daily traffic volumes and vehicle types

6.1 Traffic generation

The traffic volume that will be generated by the proposed development has been estimated using trip generation rates derived with reference to the following sources:

• Roads and Traffic Authority of New South Wales *Guide to Traffic Generating Developments* (2002).

The trip generation rates adopted are detailed in Table 2.

Table 2: Adopted trip rates for traffic generation

Land use	Trip rate source	Daily rate	AM rate	PM rate	AM-in	AM-out	PM-in	PM-out
Child Care	RTA NSW	4	0.8	0.8	50%	50%	50%	50%

The RTA Guide specifies a rate of 1.4 trips per child between 7am and 9am (2 hours), so it was assumed that 0.8 trip per child would be generated in the peak hour (8am to 9am). The RTA Guide specifies 0.8 trips per child between 2:30pm and 4:00pm. For simplicity, it was conservatively assumed 0.8 trip per child would also be generated in the PM peak hour.

Child care centres have well defined peak periods in their daily traffic profiles therefore the daily trip rate would be no more than 4 trips per child.

The estimated traffic generation of the proposed development is detailed in Table 3. The proposed development is estimated to generate 384 vehicles per day (vpd), with 78 vehicles per hour (vph) generated during the AM and PM peak hours, respectively.

These trips include both inbound and outbound vehicle movements. It is anticipated that most of the vehicle types would be passenger cars and SUVs.

Land use	Quantity	Daily Trips	AM Trips	PM Trips	AM Peak Trips		PM Peak Trips	
Lanu use					IN	OUT	IN	OUT
Child Care	96	384	78	78	39	39	39	39
Total		384	78	78	39	39	39	39

Table 3: Development traffic generation – Weekday AM and PM peak hours

6.2 Impact on surrounding roads

The WAPC Transport Impact Assessment Guidelines for Developments (2016) provides the following guidance on the assessment of traffic impacts:

"As a general guide, an increase in traffic of less than 10 percent of capacity would not normally be likely to have a material impact on any particular section of road but increases over 10 percent may. All sections of road with an increase greater than 10 percent of capacity should therefore be included in the analysis. For ease of assessment, an increase of 100 vehicles per hour for any lane can be considered as equating to around 10 percent of capacity. Therefore, any section of road where development traffic would increase flows by more than 100 vehicles per hour for any lane should be included in the analysis."

The proposed development will not increase traffic flows on any roads adjacent to the site by the quoted WAPC threshold of +100vph to warrant further analysis. Therefore, the impact on the surrounding road network is moderate (Figure 6).

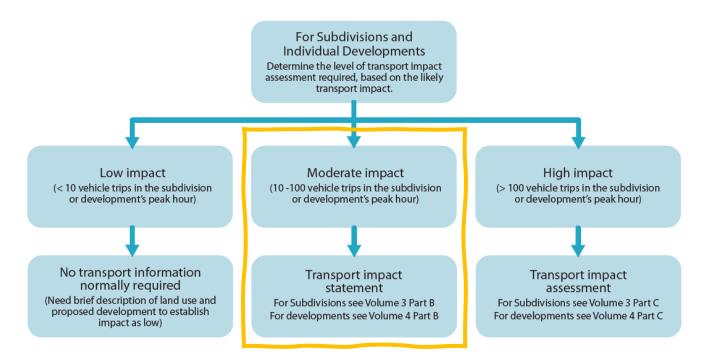


Figure 6: Level of traffic impact for subdivisions and individual developments

Source: WAPC Transport Impact Assessment Guidelines Volume 4: Individual Developments, August 2016

7 Traffic management on the frontage roads

Information from online mapping services, Main Roads WA, Local Government, and/or site visits was collected to assess the existing traffic management on frontage roads.

Lawrence Way near the subject site is an approximately 7m wide, two-lane undivided road. Footpaths are provided along both sides of the road. A pedestrian crossing with kerb ramps is provided adjacent to the site.

Lawrence Way is classified as an *Access Road* in the Main Roads WA road hierarchy (Figure 7) and operates under a built-up area speed limit of 50km/h. A school zone speed limit of 40km/h is applicable between 7:30am to 9:00am and 2:00pm to 3:30pm on School Days (Figure 8).

Access Roads are the responsibility of Local Government and are typically for the provision of vehicle access to abutting properties (Figure 9).

Orton Road near the subject site is an approximately 6.5m wide, two-lane undivided road. A footpath is provided along the northern side of the road.

Orton Road is classified as a *Local Distributor Road* in the Main Roads WA road hierarchy (Figure 7) and operates under the default speed limit (Figure 8). Local Distributor Roads are the responsibility of Local Government and are typically for the movement of traffic within local areas and to connect access roads to higher order Distributors.

Traffic count data obtained from the Shire of Serpentine Jarrahdale indicates that Orton Road carried average weekday traffic flows of under 500 vehicles per day (vpd) in 2020, with a recorded 85th percentile speed of 79km/h and 16.7% HVs.

Maive Street near the subject site is an approximately 6m wide, two-lane undivided road. A footpath is provided on the northern side of the road. A pedestrian crossing with kerb ramps is provided adjacent to the site.

The intersection of Orton Road and Lawrence Way is planned to be upgraded to a 3-leg roundabout. The proposed development plans show the future upgrade of Orton Road to a dual carriageway standard with the roundabout intersection. Advice was sought from the Shire regarding the planning time horizons for these upgrades. However, no information was available at the time this report was prepared.







Figure 7: Main Roads WA road hierarchy plan

Source: Main Roads WA Road Information Mapping System (RIM)

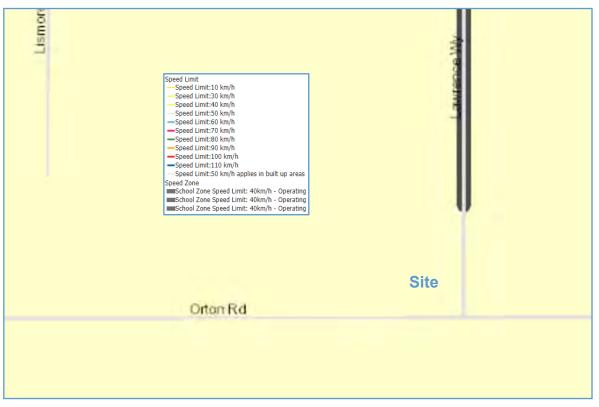


Figure 8: Main Roads WA road speed zoning plan

Source: Main Roads WA Road Information Mapping System (RIM)

[PRIMARY DISTRIBUTOR	DISTRICT DISTRIBUTOR A	TYPES AND CRITERIA (see DISTRICT DISTRIBUTOR B	REGIONAL DISTRIBUTOR	LOCAL DISTRIBUTOR	ACCESS ROAD
CRITERIA	(PD) (see Note 2)	(DA)	(DB)	(RD)	(LD)	(A)
Primary Criteria						-
1. Location (see Note 3)	All of WA incl. BUA	Only Built Up Area.	Only Built Up Area.	Only Non Built Up Area. (see Note 4)	All of WA incl. BUA	All of WA incl. BUA
2. Responsibility	Main Roads Western Australia.	Local Government.	Local Government.	Local Government.	Local Government.	Local Government.
3. Degree of Connectivity	High. Connects to other Primary and Distributor roads.	High. Connects to Primary and/or other Distributor roads.	High. Connects to Primary and/or other Distributor roads.	High. Connects to Primary and/or other Distributor roads.	Medium. Minor Network Role Connects to Distributors and Access Roads.	Low. Provides mainly for property access.
4. Predominant Purpose	Movement of inter regional and/or cross town/city traffic, e.g. freeways, highways and main roads.	High capacity traffic movements between industrial, commercial and residential areas.	Reduced capacity but high traffic volumes travelling between industrial, commercial and residential areas.	Roads linking significant destinations and designed for efficient movement of people and goods between and within regions.	Movement of traffic within local areas and connect access roads to higher order Distributors.	Provision of vehicle access to abutting properties
Secondary Criteria	1	r	r	1		
 Indicative Traffic Volume (AADT) 	In accordance with Classification Assessment Guidelines.	Above 8 000 vpd	Above 6 000 vpd.	Greater than 100 vpd	Built Up Area - Maximum desirable volume 6 000 vpd. Non Built Up Area - up to 100 vpd.	Built Up Area - Maximum desirable volume 3 000 vpd. Non Built Up Area – up to 75 vpd.
6. Recommended Operating Speed	60 – 110 km/h (depending on design characteristics).	60 – 80 km/h.	60 – 70 km/h.	50 – 110 km/h (depending on design characteristics).	Built Up Area 50 - 60 km/h (desired speed) Non Built Up Area 60 - 110 km/h (depending on design characteristics).	Built Up Area 50 km/h (desired speed). Non Built Up Area 50 – 110 km/h (depending on design characteristics).
7. Heavy Vehicles permitted	Yes.	Yes.	Yes.	Yes.	Yes, but preferably only to service properties.	Only to service properties.
8. Intersection treatments	Controlled with appropriate measures e.g. high speed traffic management, signing, line marking, grade separation.	Controlled with appropriate measures e.g. traffic signals.	Controlled with appropriate Local Area Traffic Management.	Controlled with measures such as signing and line marking of intersections.	Controlled with minor Local Area Traffic Management or measures such as signing.	Self controlling with minor measures.
9. Frontage Access	None on Controlled Access Roads. On other routes, preferably none, but limited access is acceptable to service individual properties.	Prefer not to have residential access. Limited commercial access, generally via service roads.	Residential and commercial access due to its historic status Prefer to limit when and where possible.	Prefer not to have property access. Limited commercial access, generally via lesser roads.	Yes, for property and commercial access due to its historic status. Prefer to limit whenever possible. Side entry is preferred.	Yes.
10. Pedestrians	Preferably none. Crossing should be controlled where possible.	With positive measures for control and safety e.g. pedestrian signals.	With appropriate measures for control and safety e.g. median/islands refuges.	Measures for control and safety such as careful siteing of school bus stops and rest areas.	Yes, with minor safety measures where necessary.	Yes.
11. Buses	Yes.	Yes.	Yes.	Yes.	Yes.	If necessary (see Note 5)
12. On-Road Parking	No (emergency parking on shoulders only).	Generally no. Clearways where necessary.	Not preferred. Clearways where necessary.	No – emergency parking on shoulders – encourage parking in off road rest areas where possible.	Built Up Area – yes, where sufficient width and sight distance allow safe passing. Non Built Up Area – no. Emergency parking on shoulders.	Yes, where sufficient width and sight distance allow safe passing.
13. Signs & Linemarking	Centrelines, speed signs, guide and service signs to highway standard.	Centrelines, speed signs, guide and service signs.	Centrelines, speed signs, guide and service signs.	Centrelines, speed signs and guide signs.	Speed and guide signs.	Urban areas – generally not applicable. Rural areas - Guide signs.
14. Rest Areas/Parking Bays	In accordance with Main Roads' Roadside Stopping Places Policy.	Not Applicable.	Not Applicable.	Parking Bays/Rest Areas. Desired at 60km spacing.	Not Applicable.	Not Applicable.

Figure 9: Road types and criteria for Western Australia

Source: Main Roads Western Australia D10#10992

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8 Public transport access

Information was collected from Transperth, PTA and site visits to assess the existing public transport access to and from the site.

Public transport accessibility is presently limited for the locality. The nearest bus service is route 254, which is over 1.5km walking distance from the site. The limited connectivity will make public transport less desirable in comparison to walking and cycling in the interim.

The Byford Rail Extension and Byford Rail Station are being planned as part of Metronet. Once the rail extension is constructed and the surrounding vacant lots are developed, the PTA will run extra feeder buses in the locality which will connect to the train station.

In the medium to long term, bus accessibility for the development is expected to be good.

9 Pedestrian access

Information from online mapping services, Main Roads WA, Local Government, and site visits was collected to assess the pedestrian access for the proposed development.

9.1 Pedestrian facilities and level of service

Footpaths are provided on Lawrence Way and Maive Street for walking and cycling access into the site. Pedestrian crossing facilities including kerb ramps are provided at nearby intersections which promotes improved access for bicycles, wheelchairs, and prams.

The WAPC Transport Impact Assessment Guidelines for Developments (2016) provide warrants for installing pedestrian priority crossing facilities. This is based on the volume of traffic as the key factor determining if pedestrians can safely cross a road. The guidelines recommend pedestrian priority crossing facilities be considered once the peak hour traffic exceeds the volumes detailed in Table 4.

The traffic volumes in this table are based on a maximum delay of 45 seconds for pedestrians, equivalent to Level of Service E. The pedestrian crossing facilities on adjacent roads near the site are sufficient and within the traffic volume thresholds.

Road cross-section	Maximum traffic volumes providing safe pedestrian gap		
2-lane undivided	1,100 vehicles per hour		
2-lane divided (with refuge)	2,800 vehicles per hour		
4-lane undivided*	700 vehicles per hour		
4-lane divided (with refuge)*	1,600 vehicles per hour		

Table 4: Traffic volume thresholds for pedestrian crossings



10 Bicycle access

Information from online mapping services, Department of Transport, Local Government, and/or site visits was collected to assess bicycle access for the proposed development.

10.1 Bicycle network

The Department of Transport Perth Bicycle Network Map (see Figure 10) shows the existing cyclist connectivity to the subject site. There is currently limited infrastructure for cycling. People may cycle on road and less confident people may legally cycle on footpaths in Western Australia. The cycling network is expected to be further developed over time as the surrounding vacant lots are developed and the Byford Rail Extension is constructed.

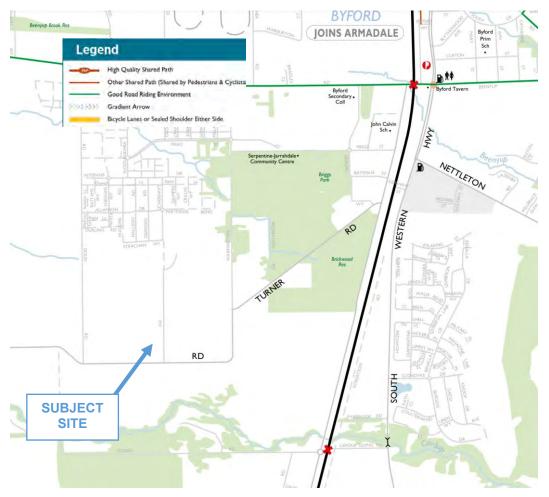


Figure 10: Perth bicycle network plan

10.2 Bicycle parking and end of trip facilities

Parking for six bicycles will be provided as part of the proposed development. End of trip facilities including a shower, change room and lockers are provided to encourage active transport for staff.

11 Site specific issues

No additional site-specific issues were identified within the scope of this assessment.





12 Safety issues

The five-year crash history in the vicinity of the site was obtained from Main Roads WA. As detailed in Figure 11, no crashes were recorded in the locality in the last five years.

The low traffic generation of the proposed development is unlikely to impact traffic safety in the area.



Figure 11: 5-year crash map in the locality (2018-2022)

Source: MRWA crash mapping tool

13 Conclusion

This Transport Impact Statement has been prepared by Urbii on behalf of Planning Solutions with regards to the proposed child care centre, located at Lot 631 (108) Lawrence Way, Byford.

The subject site is situated on the north-west corner of Lawrence Way and Orton Road, as shown in Figure 1. The site is presently vacant and is surrounded by mostly vacant residential land, which is under development. Beenyup Primary School is located nearby to the north.

It is proposed to develop the site into a child care centre catering for up to 96 children and around 16 staff.

The site features good connectivity with the existing road and walking network. There is limited accessibility for cycling and public transport. Infrastructure for these transport modes is expected to improve as vacant lots are developed and the Byford Rail Extension is constructed with feeder bus services.

The traffic analysis undertaken in this report shows that the traffic generation of the proposed development is minimal (less than 100vph on any lane) and as such would have insignificant impact on the surrounding road network.

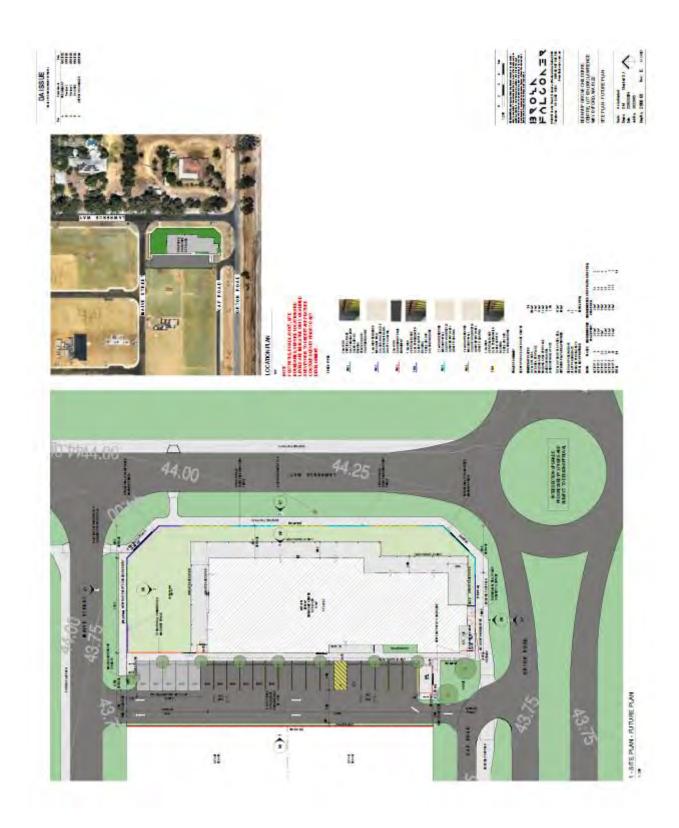
The proposed car parking provision can accommodate the needs of the child care centre.

It is concluded that the findings of this Transport Impact Statement are supportive of the proposed development.



Appendices

Appendix A: Proposed development plans



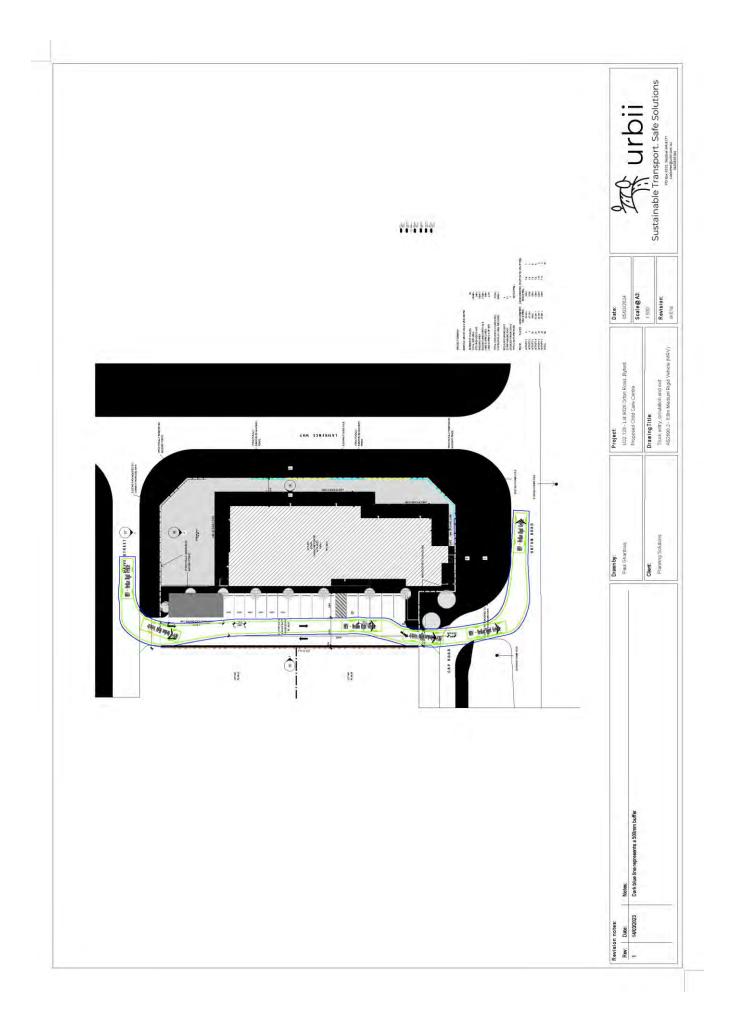
Appendix B: Swept path diagrams

Swept path diagrams are included in this section of the report. Different coloured lines are employed to represent the various envelopes of the vehicle swept path, as described below:

Cyan	represents the wheel path of the vehicle
Green	represents the vehicle body envelope
Blue	represents a 500mm safety buffer line, offset from the vehicle swept path

The swept path diagrams are also provided separately in high-quality, A3 PDF format.





Bushfire Management Plan: Development Application: Childcare Centre – Lot 631 (108) Lawrence Way, Byford 6122

Planning Solutions





DOCUMENT TRACKING

Project Name	Bushfire Management Plan: Development Application: Childcare centre – Lot 631 (108) Lawrence Way, Byford WA 6122					
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Approved by	Eva Cronin (BPAD Level 2 – 45482)					
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This document has been prepared by Eco Logical Australia Pty Ltd with support from Planning Solutions (the client).

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Template 2.8.1

Version control					
Version	Purpose				
v1	Draft – Submission to client				
v2	Draft – Minor amendments to response to client comments				

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1. Introduction

1.1 Proposal details

Eco Logical Australia (ELA) was commissioned by Planning Solutions to prepare a Bushfire Management Plan (BMP) to support a development application for Lot 631 (108) Lawrence Way, Byford WA 6122 (hereafter referred to as the subject site, Figure 1). The proposed development will result in an intensification of land use and involves the development of a Childcare Centre (Figure 2).

The subject site is within a designated bushfire prone area as per the *Western Australia State Map of Bush Fire Prone Areas* (DFES 2022; Figure 3), which triggers bushfire planning requirements *under State Planning Policy 3.7 Planning in Bushfire Prone Areas* (SPP 3.7; Western Australian Planning Commission (WAPC) 2015) and reporting to accompany submission of the development application in accordance with the associated *Guidelines for Planning in Bushfire Prone Areas v 1.4* (the Guidelines; WAPC 2021).

The subject site is located within the Beenyup Grove Estate, in the Shire of Serpentine Jarrahdale. The site is surrounded by residential and large vegetated rural blocks. The north and west of the site are predominantly cleared areas for future residential development. East and south of the site is predominantly managed low threat vegetation on large rural blocks of land. There is, however, a strip of grassland (approximately 11 m wide measured perpendicular to the subject site) located south of site that extends in an east – west direction, connecting to a larger patch of grassland to the southeast.

This assessment has been prepared by ELA Bushfire Consultant Maitland Ely with quality assurance undertaken by Senior Bushfire Consultant Eva Cronin (FPAA BPAD Level 2 Certified Practitioner No. BPAD45482) and Principal Bushfire Consultant Daniel Panickar (FPAA BPAD Level 3 Certified Practitioner No. BPAD37802).

1.2 Purpose and application of the plan

The primary purpose of this BMP is to act as a technical supporting document to inform planning assessment. This BMP is also designed to provide guidance on how to plan for and manage the bushfire risk to the subject site through implementation of a range of bushfire management measures in accordance with the Guidelines.

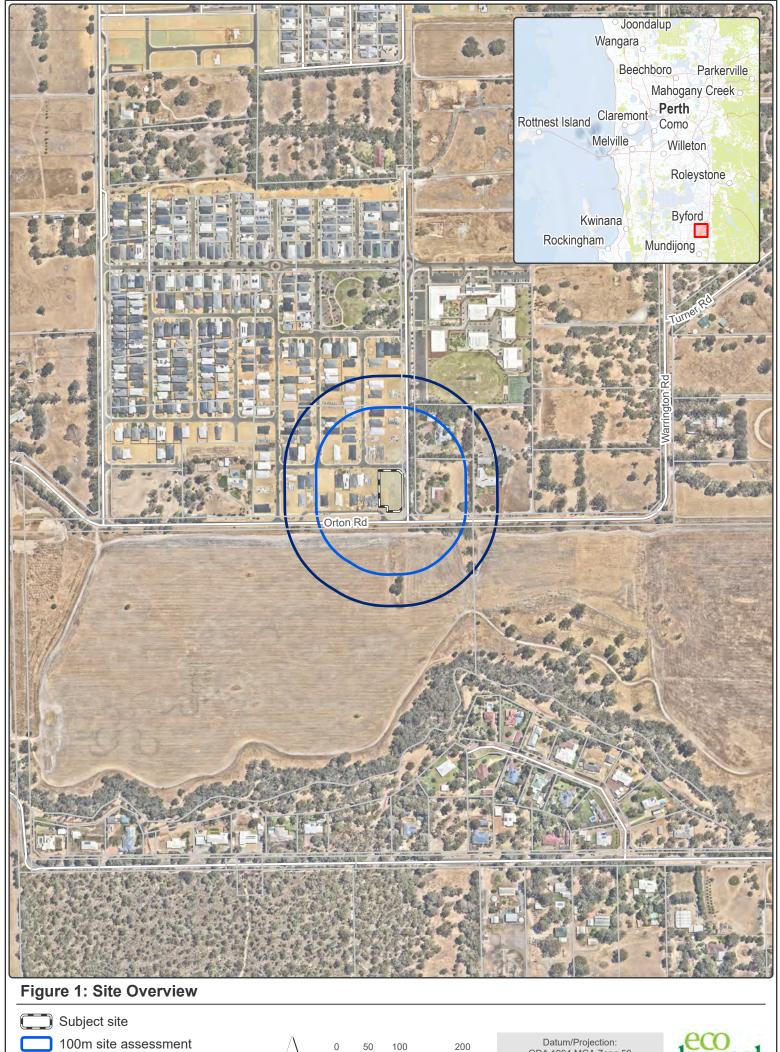
The proposed land use within the subject site (i.e. childcare) is categorised as vulnerable due to the activities planned on site and the definitions within the Guidelines (WAPC 2021). A Bushfire Emergency Evacuation Plan (BEEP) is required to be submitted with the development application and will be required to be updated and maintained prior to the occupancy of the childcare centre. This BMP and BEEP are to be used in conjunction with one another to ensure that the intent of SPP 3.7 is achieved.

1.3 Environmental considerations

SPP 3.7 policy objective 5.4 recognises the need to consider bushfire risk management measures alongside environmental, biodiversity and conservation values.

The subject site has been previously cleared, resulting in no existing native vegetation on site.

No revegetation is proposed within the development and landscaping will be maintained in a low-threat state in accordance with Clause 2.2.3.2 of AS 3959: 2018.



150m site assessment

Cadastre



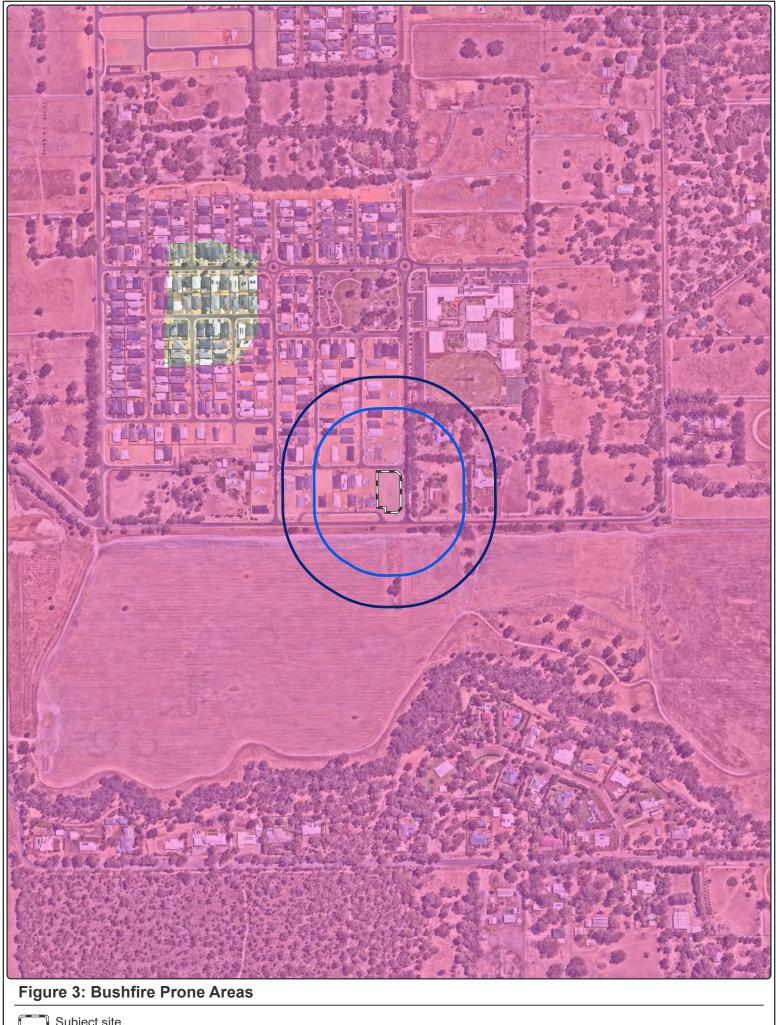
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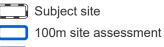


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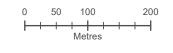


Figure 2: Site Plan





- 150m site assessment
- Bushfire Prone Mapping (DFES 2021)



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2. Bushfire assessment results

2.1 Bushfire assessment inputs

The following section is a consideration of spatial bushfire risk and has been used to inform the bushfire assessment in this report.

2.1.1 Fire Danger Index

A blanket Fire Danger Index (FDI) 80 is adopted for Western Australia, as outlined in Australian Standard *AS 3959: 2018 Construction of Buildings in Bushfire Prone Areas* (SA 2018) and endorsed by Australasian Fire and Emergency Service Authorities Council (AFAC).

2.1.2 Vegetation classification and slope under vegetation

Vegetation and effective slope (i.e. slope under vegetation) within the subject site and surrounding 150 m (the assessment area) were assessed in accordance with the Guidelines and *AS 3959: 2018* with regard given to the *Visual guide for bushfire risk assessment in Western Australia* (DoP 2016). Site assessment was undertaken on 9 December 2022.

The classified vegetation and effective slope for the proposed development from each of the identified vegetation plots are identified below in Table 1 and Figure 4.

Table 1: Classified vegetation as per AS 3959: 2018

Plot	Vegetation Classification	Effective Slope		
1	Class G Grassland	All upslopes and flat land (0 degrees)		
2	Excluded AS 3959: 2009 2.2.3.2 (e) & (f)	-		

Photographs relating to each area and vegetation type are included in Appendix A.

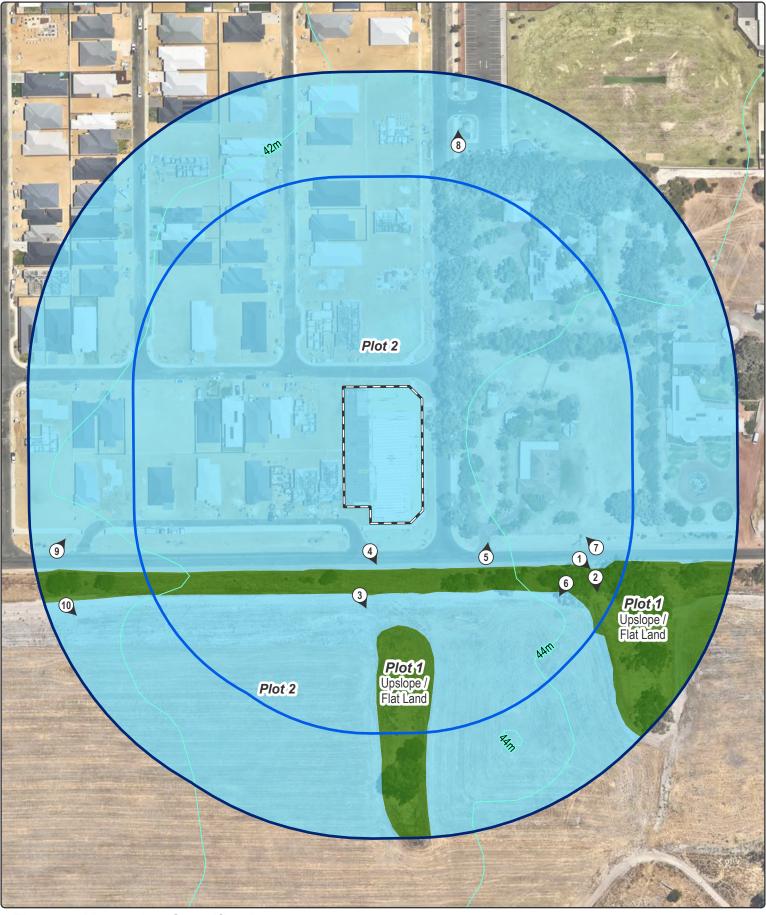


Figure 4: Vegetation Classification

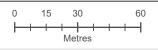
Subject site

(

- 100m site assessment
- 150m site assessment
- Contour (2m)
- Photo location

Vegetation classification

- Class G grassland
 - Excluded as per clause 2.2.3.2 (e) and (f)



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22PER4135-ED/OK Date: 12/03/2024





2.2 Bushfire assessment outputs

A Bushfire Attack Level (BAL) assessment has been undertaken in accordance with SPP 3.7, the Guidelines, AS 3959: 2018 and the bushfire assessment inputs in Section 2.1.

2.2.1 BAL assessment

All land located within 100 m of the classified vegetation depicted in Figure 4 is considered bushfire prone and is subject to a BAL assessment in accordance with AS 3959: 2018.

A Method 1 BAL assessment (as outlined in AS 3959: 2018) has been completed for the proposed development and incorporates the following factors:

- Fire Danger Index (FDI) rating;
- Vegetation class;
- Slope under classified vegetation; and
- Distance between proposed development area and the classified vegetation.

Based on the identified BAL, construction requirements for the proposed building can then be assigned. The BAL rating gives an indication of the expected level of bushfire attack (i.e. radiant heat flux, flame contact and ember penetration) that may be received by proposed buildings and subsequently informs the standard of construction required to increase building survivability.

2.2.2 Method 1 BAL assessment

Table 2 and Figure 5 display the Method 1 BAL assessment (in the form of BAL contours) that has been completed for the proposed development in accordance with AS 3959: 2018 methodology.

Plot	Vegetation Classification	Effective Slope -	Separation distances required				
PIOL			BAL-FZ	BAL-40	BAL-29	BAL-19	BAL-12.5
1	Class G Grassland	All upslopes and flat land (0 degrees)	<6	6-<8	8-<12	12-<17	17-<50
2	Excluded AS 3959: 2018 2.2.3.2 (e) & (f)	-	No separation distances required – BAL-LOW		OW		

Table 2: Method 1 BAL calculation (BAL contours)

Based on the site assessment inputs and BAL assessment, the proposed childcare centre within the subject site has a BAL rating of BAL-12.5.

Given the vulnerable nature of the development, ELA recommends that the childcare centre is constructed to BAL-19 standards.

The Guidelines state:

The bushfire construction requirements of the Building Code of Australia only apply to certain types of residential buildings (being Class 1, 2 or 3 buildings and/or Class 10a buildings or decks associated with a Class 1, 2 or 3 building) in designated bushfire prone areas. As such, AS 3959 does not apply to all buildings. Only vulnerable or high-risk land uses that fall within the relevant classes of buildings as set out in the Building Code of Australia will be required to comply with the bushfire construction requirements of the Building Code of Australia. As such, the planning process focuses on the location and siting of vulnerable and high-risk land uses rather than the application of bushfire construction requirements.

As none of the proposed structures is a Class 1, 2 or 3 building and/or Class 10a building or deck associated with a Class 1, 2 or 3 building, construction to AS 3959: 2018 is not required for this proposal.

As the proposed building is not a Class 1, 2 or 3 building and/or Class 10a building or deck associated with a Class 1,2 or 3 building, construction to AS 3959: 2018 is not required. However, given the vulnerable land use of the proposed development, ELA recommends that the childcare centre building is constructed to BAL-19 (i.e. one level higher than the actual BAL rating for the building).

Table 3: BAL rating for proposed building within the subject site

Proposed building	Plot most affecting BAL rating	Separation Distance (m)	BAL Rating
Childcare Centre	Plot 1	22.06	BAL-12.5

2.3 Identification of issues arising from the BAL assessment

Should there be any changes in development design or vegetation/hazard extent that requires a modified bushfire management response, then the above BAL ratings will need to be reassessed for the affected areas and documented in a brief addendum to this BMP.

All landscaping within the subject site as per Figure 6 will be maintained to a low threat state as per Clauses 2.2.3.2 (f) AS 3959: 2018.

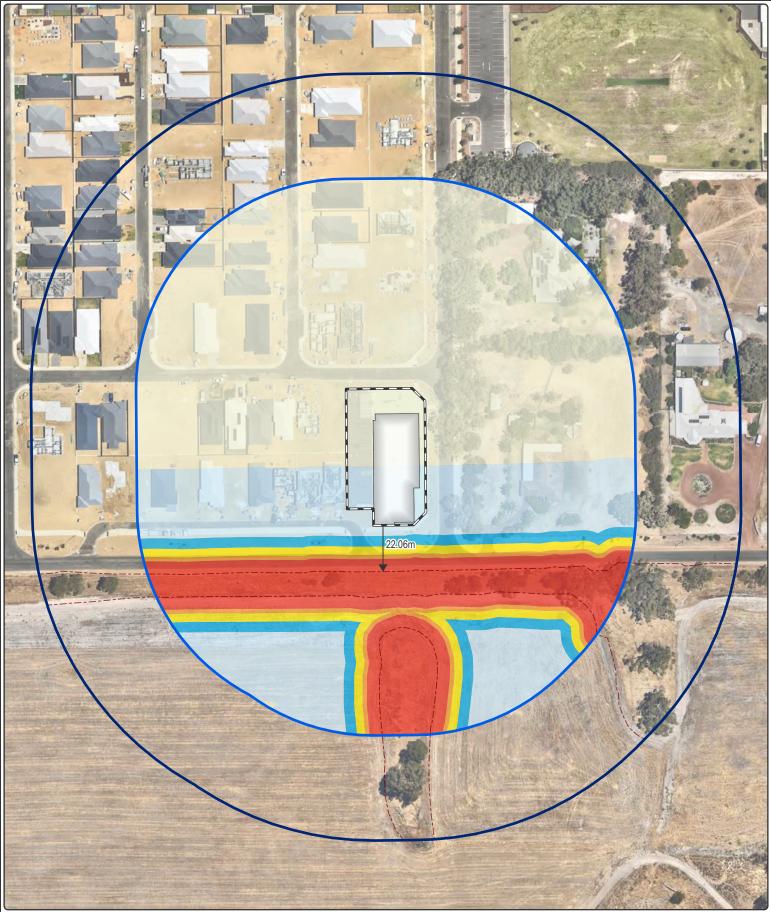
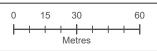


Figure 5: Bushfire Attack Level (BAL) Contours

- Subject site 100m site assessment 150m site assessment
- Bushfire hazard interface Proposed building

Bushfire Attack Level (BAL)						
	BAL - FZ					
	BAL - 40					
	BAL - 29					
	BAL - 19					
	BAL - 12.5					
	BAL - LOW					



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3. Assessment against the Bushfire Protection Criteria

3.1 Compliance

The proposed development is required to comply with policy measures 6.2, 6.5 and 6.6 of SPP 3.7 and the Guidelines. Implementation of this BMP is expected to meet objectives 5.1-5.4 of SPP 3.7.

In response to the above requirements of SPP 3.7 and the Guidelines, bushfire risk management measures, as outlined, have been devised for the proposed development in accordance with Guideline acceptable solutions to meet compliance with bushfire protection criteria.

Table 4 outlines the Acceptable Solutions (AS) that are relevant to the proposal and summarises how the intent of each Bushfire Protection Criteria has been achieved. No Performance Solutions (PS) have been proposed for this proposal. These management measures are depicted in Figure 6 where relevant.

Bushfire Protection Criteria		PS	N/A	Comment	
Element 1: Location A1.1 Development location				The proposed building within the subject site will be located in an area subject to BAL ratings of ≤BAL-12.5 (Figure 5; Figure 6). The proposed development is considered to be compliant with A1.1.	
Element 2: Siting and design of development A2.1 Asset Protection Zone (APZ)				The proposed development area has been assessed to be within an area containing non-vegetated areas that will all continue to be maintained to the standard of a low threat state as per clause 2.2.3.2 (e) & (f) of AS 3959: 2018 in perpetuity. The current siting is sufficient for the potential radiant heat flux to not exceed 29kW/m ² and the proposed development area, therefore, does not require an APZ. Compliance with A2.1 is not applicable to this proposed development.	
Element 3: Vehicular access A3.1 Public Roads				The subject site is accessed via existing public roads, with access/egress point into subject site coming off Maive Street. An egress point to existing Cap Road is also proposed. The Guidelines do not prescribe values for the trafficable (carriageway/pavement) width of public roads as they should be in accordance with the class of road as specified in the IPWEA Subdivision Guidelines, Liveable Neighbourhoods, Austroad Standards and/or any applicable standard in the local government area. ELA's assessment identified that all of the surrounding roads are bitumen with estimated width of the sealed surface achieving a minimum width of ≥6 m and therefore consider the existing road network would provide suitable access and egress for the community and emergency services personnel in the event of a bushfire. Vehicular access technical	

Table 4: Summary of solutions used to achieve bushfire protection criteria

Bushfire Protection Criteria	AS	PS	N/A	Comment
				requirements in accordance with the Guidelines are detailed in (Appendix C).
				No public roads are proposed as a part of this Development Application.
				The proposed development is considered to be compliant with A3.1.
A3.2a Multiple access routes				Two access routes to/from the subject site are available (Figure 6). Refer to A3.1 above for details regarding vehicular access technical requirements for public roads. The proposed development is considered to be compliant with A3.2a.
A3.2b Emergency Access way			\boxtimes	No emergency access ways are required or proposed.
A3.3 Through-roads				This acceptable solution does not apply to Development Applications.
A3.4a Perimeter roads			\boxtimes	This acceptable solution does not apply to Development Applications.
A3.4b Fire service access route			\boxtimes	This acceptable solution does not apply to Development Applications.
A3.5 Battle-axe access legs			\boxtimes	This acceptable solution does not apply to Development Applications.
A3.6 Private driveways				The subject site is serviced by reticulated water and the subject site is accessed by a public road where speed limit is not greater than 70 km/hr. The childcare centre building is within 70 m of a public road as the subject site is bound by Orton Road to the south, Lawrence Way to the east and Maive Street to the north.
				Given the above, this acceptable solution does not apply to the Development Application.
Element 4: Water A4.1 Identification of future water supply			\boxtimes	This acceptable solution does not apply to Development Applications.
A4.2 Provision of water for firefighting purposes				Existing reticulated water is present within the area. ELA assume the hydrants and the existing reticulated water supply present within the surrounding recently developed Beenyup Grove Estate likely complies with Water Corporations Design Standard DS 63 Water Reticulation Standard, however, recommend this is confirmed with the Water Corporation, where possible. Hydrants within the surrounding residential development are generally spaced approximately 150 m apart) as depicted in Figure 6. Note: this development may require a hydrant system within the subject site that complies with the FES Commissioner's operational requirements as per regulation 18B of the Building Regulations 2012,

Bushfire Protection Criteria	AS	PS	N/A	Comment
				however, this will be determined by the building surveyor and decision maker(s). The proposed development is considered to be compliant with A4.2.
Element 5: Vulnerable tourism land uses				This development application is not considered vulnerable tourism land use. Element 5 is not applicable to this proposed development.

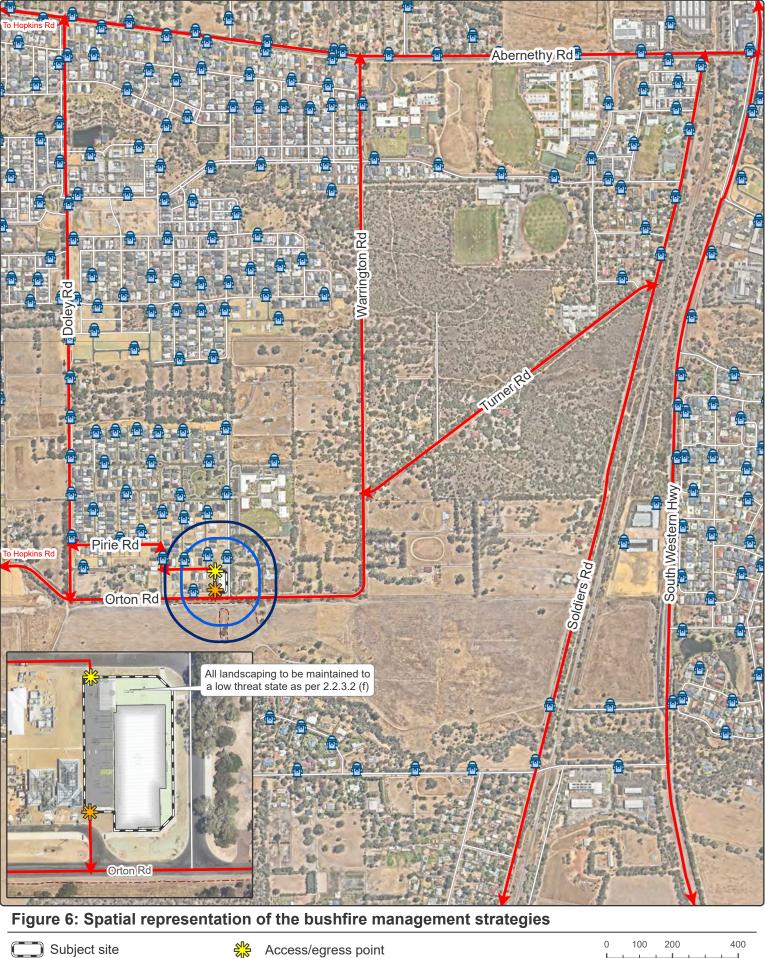
NOTE - AS- ACCEPTABLE SOLUTION, PS- PERFORMANCE SOLUTION, N/A- NOT APPLICABLE

3.2 Additional Bushfire Requirements

A BEEP has been prepared for the proposed childcare centre in accordance with SPP 3.7 and 'A Guide to developing a Bushfire Emergency Evacuation Plan' (WAPC 2019). This BEEP (ELA 2024) details evacuation procedures in the event of a bushfire.

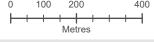
Due to the vulnerable nature of the land use, the increased bushfire risk of the area and the potential emergency evacuation requirements in the event of a bushfire, ELA recommend the proposed buildings be constructed to BAL-19 standard.

All other landscaping within the subject site will be maintained to a low threat state as per Clauses 2.2.3.2 (f) AS 3959: 2018.



- 100m site assessment
- 150m site assessment
- Bushfire hazard interface
 - Proposed building
 - Lot boundary

- Egress point
- Hydrant ₫



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4. Implementation and enforcement

Implementation of the BMP applies to the developer, future owners within the subject site and the local government to ensure bushfire management measures are adopted and implemented on an ongoing basis. A summary of the bushfire management measures described in Section 3, as well as a works program, is provided in Table 5. These measures will be implemented to ensure the ongoing protection of life and property assets is achieved. Timing and responsibilities are also defined to assist with implementation of each measure.

No	Bushfire management measure	Responsibility
Prior to o	ccupancy	
1	Ensure proposed building is located outside of areas subject to BAL-FZ and BAL-40 as per the design in Figure 6.	Developer
2	Extend reticulated water supply to appropriate areas	Developer
3	Ensure landscaping within the subject site is maintained to a low threat state as per exclusion clause 2.2.3.2 of AS 3959: 2018 (Figure 6).	Developer
4	Construct internal road network as per plan in Figure 6.	Developer
5	Construct childcare centre building to BAL-19.	Builder
6	Implement the Bushfire Emergency Evacuation Plan (BEEP) prior to occupancy.	Developer
7	Place Section 70A Notification on Title advising lot is located in a bushfire prone area and subject to requirements of this BMP.	Shire of Serpentine Jarrahdale
Ongoing	management	
8	Maintain landscaping within the subject site to a low threat state.	Owner/Operator
9	Review the BEEP prepared for the development on an annual basis and updated details/procedures as required.	Owner/Operator

Table 5: Proposed work program

5. Conclusion

In the author's professional opinion, the bushfire protection requirements listed in this assessment provide an adequate standard of bushfire protection for the proposed development. As such, the proposed development is consistent with the aim and objectives of SPP 3.7 and associated guidelines and is recommended for approval.

6. References

Shire of Serpentine Jarrahdale (SoSJ), 2022, Fire Hazard Reduction Notice, [Online], available from 23265 - Fire Hazard Reduction Notice - 2022-23 FINAL.pdf (sjshire.wa.gov.au)

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Appendix A – Classified Vegetation Photos

Plot

Classification or Exclusion Clause

Class G Grassland

Photo Point 1

1

This plot is comprised of grasses and isolated trees.

This area has a land management agreement over it between the developer of the subject site (Parcel Property) and the landowner of this area (LWP Property) to manage the land in accordance with the Shire of Serpentine Jarrahdale firebreak notice, thereby creating low threat vegetation. Whilst this area could be excluded following fuel reduction works, ELA has adopted a conservative approach to this area given the proposed land use within the subject site (i.e. childcare centre) is vulnerable.

Slope under vegetation has been assessed as upslope/flat land.

Plot **Classification or Exclusion Clause** 1

Photo Point 2

This plot is comprised of grasses and isolated trees.

This area has a land management agreement over it between the developer of the subject site (Parcel Property) and the landowner of this area (LWP Property) to manage the land in accordance with the Shire of Serpentine Jarrahdale firebreak notice, thereby creating low threat vegetation. Whilst this area could be excluded following fuel reduction works, ELA has adopted a conservative approach to this area given the proposed land use within the subject site (i.e. childcare centre) is vulnerable.

Slope under vegetation has been assessed as upslope/flat land.

Plot **Classification or Exclusion Clause**

Photo Point 3

This plot is comprised of grasses and isolated trees.

This area has a land management agreement over it between the developer of the subject site (Parcel Property) and the landowner of this area (LWP Property) to manage the land in accordance with the Shire of Serpentine Jarrahdale firebreak notice, thereby creating low threat vegetation. Whilst this area could be excluded following fuel reduction works, ELA has adopted a conservative approach to this area given the proposed land use within the subject site (i.e. childcare centre) is vulnerable.

Slope under vegetation has been assessed as upslope/flat land.









Plot **Classification or Exclusion Clause** 1

Photo Point 4

This plot is comprised of grasses and isolated trees.

This area has a land management agreement over it between the developer of the subject site (Parcel Property) and the landowner of this area (LWP Property) to manage the land in accordance with the Shire of Serpentine Jarrahdale firebreak notice, thereby creating low threat vegetation. Whilst this area could be excluded following fuel reduction works, ELA has adopted a conservative approach to this area given the proposed land use within the subject site (i.e. childcare centre) is vulnerable.

Slope under vegetation has been assessed as upslope/flat land.

Plot **Classification or Exclusion Clause** 2

Photo Point 5

Non-vegetated area that is permanently cleared of vegetation (i.e., driveways and residential development).

Vegetation within this plot is regarded as low threat due to factors such as flammability, moisture content and fuel load as it is managed grass (managed yard).

Plot 2 **Classification or Exclusion Clause**

Photo Point 6

Vegetation within this plot is regarded as low threat due to factors such as flammability, moisture content and fuel load as it is managed grass.

This land appears well-managed in accordance with the Shire of Serpentine Jarrahdale firebreak notice.





© 14°N (T) . -32.236559, 115.991918 ±4 m ▲ 10 m

NE

Excluded AS 3959: 2018 2.2.3.2 (f)

Excluded AS 3959: 2018 2.2.3.2 (e) & (f)

NW

Plot 2	Classification or Exclusion Clause	Excluded AS 3959: 2018 2.2.3.2 (e)
-	nt 7 ated area that is permanently cleared of (i.e., roads and residential development).	W NV N NE 240 200 300 0 0 300 0 300 0 0 300 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Plot 2	Classification or Exclusion Clause	Excluded AS 3959: 2018 2.2.3.2 (e) & (f)
vegetation developme Vegetation due to fac	ated area that is permanently cleared of (i.e., driveways and residential	NW N NE 300 330 0 30 60 1 0 357'N (T) + -32.234788, 115.991798 ±4 m ▲ 12 m 12 m 12 m 12 m
Plot 2	Classification or Exclusion Clause	Excluded AS 3959: 2018 2.2.3.2 (e)
Photo Poin	nt 9 ated area that is permanently cleared of	NW N E E T20 I + I + I + I + I + I + I + I + I + I +

Non-vegetated area that is permanently cleared of vegetation (i.e., roads and future residential development.



Plot 2 Clas	ssification or Exclusion Clause	Excluded AS 3959: 2018 2.2.3.2 (f)
due to factors such a and fuel load as it is This land appears w	his plot is regarded as low threat as flammability, moisture content	E 120 SE 150 SV 0 135'SE (T) + 32.236597, 115.989398 ±6 m ▲ 4 m 0 135'SE (T) + 32.236597, 115.989398 ±6 m ▲ 4 m 0 135'SE (T) + 32.236597, 115.989398 ±6 m ▲ 4 m 0 135'SE (T) + 32.236597, 115.989398 ±6 m ▲ 4 m

Appendix B – Standards for Asset Protection Zones

The following standards have been extracted from the *Guidelines for Planning in Bushfire Prone Areas* v 1.4 (WAPC 2021).

Every habitable building is to be surrounded by, and every proposed lot can achieve, an APZ depicted on submitted plans, which meets the following requirements:

a. Width: Measured from any external wall or supporting post or column of the proposed building, and of sufficient size to ensure the potential radiant heat impact of a fire does not exceed 29kW/m² (BAL-29) in all circumstances.

b. Location: the APZ should be contained solely within the boundaries of the lot on which a building is situated, except in instances where the neighbouring lot or lots will be managed in a low-fuel state on an ongoing basis, in perpetuity (see explanatory notes).

c. Management: the APZ is managed in accordance with the requirements of '*Standards for Asset Protection Zones*' (below):

- Fences within the APZ:
 - Should be constructed from non-combustible materials or bushfire-resisting timber referenced in Appendix F of AS 3959.
- Fine fuel load (Combustible, dead vegetation matter <6 millimetres in thickness):
 - Should be managed and removed on a regular basis to maintain a low threat state;
 - Should be maintained at <2 tonnes per hectare (on average); and
 - Mulches should be non-combustible (e.g. stone, gravel or crushed mineral earth) or wood mulch >6 millimetres in thickness.
- Trees (>6 metres in height):
 - Trunks at maturity should be a minimum distance of six metres from all elevations of the building;
 - Branches at maturity should not touch or overhand a building or powerline;
 - Lower branches and loose bark should be removed to a height of two metres above the ground and/or surface vegetation;
 - Canopy cover within the APZ should be <15 per cent of the total APZ area; and
 - Tree canopies at maturity should be at least five metres apart to avoid forming a continuous canopy. Stands of existing mature trees with interlocking canopies may be treated as an individual canopy provided that the total canopy cover within the APZ will not exceed 15 per cent and are not connected to the tree canopy outside the APZ.

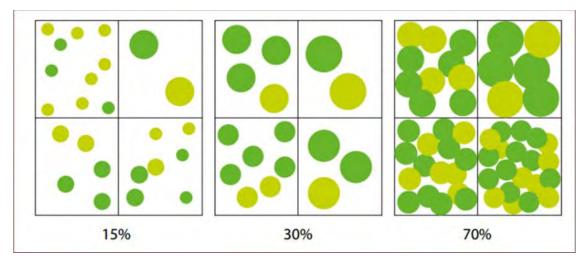


Figure 7: Illustrated tree canopy cover projection (WAPC 2021)

- Shrub and scrub 0.5 metres to six metres in height (shrub or scrub >6 metres in height are to be treated as trees):
 - Should not be located under trees or within three metres of buildings;
 - \circ Should not be planted in clumps >5 square metres in area; and
 - Clumps should be separated from each other and any exposed window or door by at least 10 metres.
- Ground covers < 0.5 metres in height (ground covers > 0.5 metres in height are to be treated as shrubs):
 - Can be planted under trees but must be maintained to remove dead plant material, as prescribed in 'Fine fuel load' above; and
 - Can be located within two metres of a structure, but three metres from windows or doors if >100 millimetres in height.
- Grass:
 - o Grass should be maintained at a height of 100 millimetres or less, at all times; and
 - Wherever possible, perennial grasses should be used and well-hydrated with regular application of wetting agents and efficient irrigation.
- Defendable space:
 - Within three metres of each wall or supporting post of a habitable building, the area is kept free from vegetation, but can include ground covers, grass and non-combustible mulches as prescribed above.
- LP Gas Cylinders:
 - Should be located on the side of a building furthest from the likely direction of a bushfire or on the side of a building where surrounding classified vegetation is upslope, at least one metre from vulnerable parts of a building;
 - The pressure relief valve should point away from the house;
 - \circ $\;$ No flammable material within six metres from the front of the valve; and
 - Must site on a firm, level and non-combustible base and be secured to a solid structure.

Additional notes

The Asset Protection Zone (APZ) is an area surrounding a building that is managed to reduce the bushfire hazard to an acceptable level. Hazard separation in the form of using subdivision design elements or excluded and low threat vegetation adjacent to the lot may be used to reduce the dimensions of the APZ within the lot.

The APZ should be contained solely within the boundaries of the lot on which the building is situated, except in instances where the neighbouring lot or lots will be managed in a low-fuel state on an ongoing basis, in perpetuity. The APZ may include public roads, waterways, footpaths, buildings, rocky outcrops, golf courses, maintained parkland as well as cultivated gardens in an urban context, but does not include grassland or vegetation on a neighbouring rural lot, farmland, wetland reserves and unmanaged public reserves.

Plant flammability, landscaping design and maintenance should also be considered for trees, shrub, scrub and ground covers with the APZ. Please refer to explanatory notes 'E2 Managing an Asset Protection Zone (APZ) to a low threat state,' 'E2 Landscaping and design of an asset protection zone,' and 'E2 Plant flammability' in the Guidelines for further information relating to APZ standards.

Appendix C - Vehicular access technical requirements (WAPC 2021)

Technical requirements	Public road	Emergency access way ¹	Fire service access route ¹	Battle-axe and private driveways ²
Minimum trafficable surface (m)	In accordance with A3.1	6	6	4
Minimum horizontal clearance (m)	N/A	6	6	6
Minimum vertical clearance (m)		4	l.5	
Minimum weight capacity (t)		1	.5	
Maximum grade unsealed road ³	As outlined in the IPWEA Subdivision Guidelines		1:10 (10%)	
Maximum grade sealed road ³	As outlined in the IPWEA Subdivision Guidelines		1:7 (14.3%)	
Maximum average grade sealed road	As outlined in the IPWEA Subdivision Guidelines		1:10 (10%)	
Minimum inner radius of road curves (m)	As outlined in the IPWEA Subdivision Guidelines		8.5	

¹ To have crossfalls between 3 and 6 %.

² Where driveways and battle-axe legs are not required to comply with the widths in A3.5 or A3.6, they are to comply with the Residential Design Codes and Development Control Policy 2.2 Residential Subdivision.

³ Dips must have no more than a 1 in 8 (12.5% -7.1 degree) entry and exit angle



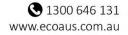
S 1300 646 131 www.ecoaus.com.au BushfireEmergencyEvacuationPlanDevelopment Application:Childcare Centre on Lot 631(108)Lawrence Way, Byford 6122

Planning Solutions

IN CASE OF A BUSHFIRE EMERGENCY, FOLLOW THE EVACUATION PLAN LOCATED IN APPENDIX A WHICH SHOULD ALSO BE PLACED IN PROMINENT STAFF LOCATIONS.

THIS REPORT IS TO SUPPORT THE PLANNING APPROVAL PROCESS AND SUPPORTING DETAIL TO THE EVACUATION PLAN





DOCUMENT TRACKING

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	Development Application: Lot 631 (108) Lawrence Way, Byford WA 6122
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Template 2.8.1

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1. Facility Details

This Bushfire Emergency Evacuation Plan (BEEP) is for the proposed childcare centre at Lot 631 (108) Lawrence Way, Byford within the Shire of Serpentine Jarrahdale and has been designed to assist management to protect life and property in the event of a bushfire.

This plan was developed in line with 'A Guide to developing a Bushfire Emergency Evacuation Plan' (WAPC 2019) to support the Development Application to construct a new childcare centre on the site. Some items are listed as To Be Confirmed (TBC) as the required information was not available during the time this plan was developed. It is critical that this plan be updated with all required information prior to the occupation of this proposed facility.

This plan assumes that the Bushfire Management Plan prepared for the development will be implemented, including construction recommendations to achieve a Bushfire Attack Level (BAL) of BAL-19.

This plan outlines procedures for both evacuation and shelter-in-place to enhance the protection of occupants from the threat of a bushfire.

The primary action to follow in a bushfire emergency is to:

EARLY CLOSURE OF THE FACILITY UNDER EXTREME (FBI≥75 AND ON ADVICE BY DFES) and CATASTROPHIC FIRE DANGER RATINGS

The primary action to follow in a bushfire emergency is to:

EVACUATE OFF-SITE (ONLY IF THE FIRE IS WITHIN VEGETATION TO THE SOUTH OF ORTON ROAD AND TIME TO BUSHFIRE ARRIVAL IS GREATER THAN 60 MINUTES OR AS OTHERWISE ADVISED BY EMERGENCY SERVICES).

The secondary action to follow in a bushfire emergency is to:

SHELTER-IN-PLACE

Table 1: Facility Details

Name of on-site contact person:	TBC
Phone number:	TBC
Type of facility:	Childcare Centre
Number of buildings:	1
Number of employees:	19
Number of occupants:	up to 125
Number of vulnerable occupants/with support needs:	96 children
Estimated maximum number of visitors:	TBC

<u>Description of support needs</u>: The childcare centre will be caring for young children that require on going supervision. Staff onsite are trained and are familiar with the requirements to care for these children.

1.1 Site risks, assumptions and recommendations

In consideration of the risk to the site and occupants' characteristics the following points were considered in determining the evacuation requirements of the Childcare Centre:

- Site risk:
 - Vegetation that poses the greatest bushfire threat to this site is located to the south of the site;
 - The vegetation to the south is a narrow strip of unmanaged grassland on opposite side of adjacent running Orton road to the south of the site that extends further east and west;
 - Bushfire hazards are separated from the development site by an area managed to low threat state as per the section 2.2.3.2 of AS 3959: 2018 and existing road adjacent to the site;
 - Potential ignition sources are likely from nearby vehicles using roads or people accessing the nearby grassland;
 - It is possible that impacts could be expected before occupants have had the opportunity to undertake safe evacuation off-site (i.e. bushfire scenarios which occur with limited warning and result in insufficient time to evacuate before bushfire attack is experienced);
- Occupant characteristics:
 - 96 children and 19 staff;
- Evacuation timing:
 - $\circ~$ Time for notification of an approaching bushfire and that evacuation is required 10 minutes;
 - \circ Time for assembly and mobilisation of all children and staff 15 minutes;
 - Off-site evacuation is Beenyup Primary School approximately 350 m walk north;
 - Time to travel to off-site evacuation location 15 minutes
 - Total time to load and travel 40 minutes;
 - Adding a safety factor of 1.5 results in total evacuation time of 60 minutes;
 - In a rapid onset bushfire scenario, the safest option is to remain on site;
 - The accuracy of evacuation timing is TBC with the Childcare Centre operator and the BEEP must be updated prior to occupancy.
 - The designated off-site location is located on the maintained oval within the Beenyup Primary School grounds, north of the proposed Childcare Centre.
 - Designation of the Beenyup Primary School as the off-site evacuation location is subject to approval and support from the Shire of Serpentine Jarrahdale and Beenyup Primary School. This will be reviewed at the time of updating the BEEP prior to occupancy, including route (by foot) to access the oval at Beenyup Primary School.
 - Evacuation to the designated off-site location (maintained oval within the Beenyup Primary School grounds) will only be triggered if the fire is within vegetation south of Orton Road <u>and</u> there is enough time to evacuate safely. If the fire is within vegetation east of Lawrence Way, north or west of the site then sheltering on-site within the shelter in place building (childcare centre building) is likely to be considered safer, as evacuation to the Beenyup

Primary School oval may result in occupants moving towards the bushfire threat, noting the off-site evacuation location nominated is an open space area.

- Limitations
 - In times of stressful situations such as evacuation and fire, children's behaviour can be erratic;
 - Traffic conditions in a bushfire emergency may impact on the time required (and safety) of the on-foot evacuation to Beenyup Primary School;
 - Smoke and heat from a bushfire (particularly in a rapid-onset event) may limit the ability for on-foot evacuation to Beenyup Primary School;
- Given the possibility for multiple bushfire scenarios to affect the proposed Childcare Centre, multiple bushfire risk management measures are proposed, which include:
 - BAL-19 construction with BAL-12.5 exposure;
 - Closure on site based on the highest FDR ratings; and
 - An evacuation plan that identifies clear triggers and actions.

Based on the above analysis, the following actions are recommended:

- 1. <u>The primary bushfire management action is</u> **EARLY CLOSURE OF THE FACILITY UNDER CATASTROPHIC FIRE DANGER RATINGS.**
- 2. <u>The primary action to follow in a bushfire emergency is</u> EVACUTE OFF-SITE (ONLY IF THE FIRE IS WITHIN VEGETATION TO THE SOUTH OF ORTON ROAD AND TIME TO BUSHFIRE ARRIVAL IS GREATER THAN 60 MINUTES OR AS OTHERWISE ADIVSED BY EMERGENCY SERVICES).
- 3. The secondary action of follow in a bushfire emergency is **SHELTER-IN-PLACE.**
- 4. Contact with bus contractors to be made prior to and throughout the bushfire season to ensure a bus (with minimum capacity to cater for 125 occupants including suitable seating to cater for young children) is on standby to facilitate evacuation to an alternative off-site location via bus, in circumstances where evacuation to the maintained oval within the Beenyup Primary School grounds is not deemed safe and sufficient time to evacuate to an alternative location is available as advised by DFES.

If shelter-in-place is required, the proposed Childcare Centre building has been determined to be a suitable on-site safer location based on the following inputs:

- The proposed Childcare Centre building is large enough to provide floor space for the maximum 125 users on site. Minimum recommended floor space is 1 person per m² which equals 125 m². The total building area is 743 m² (with a total of 314.1 m² unencumbered space provisions among six activity rooms). ELA, therefore, expect useable floor space within the proposed Childcare Centre is likely to be sufficient, however this is TBC;
- The proposed Childcare Centre building will have an APZ sufficient to ensure the maximum radiant heat flux exposure of the building will be ≤12.5 kW/m²;
- The proposed Childcare Centre building will be built to a BAL-19 construction standard in line with AS 3959: 2018; and

• The proposed Childcare Centre building is easily accessible by emergency services through use of the proposed carpark and driveway and direct access to both Orton Road (egress only) and Maive Street (access and egress).

Any direct and specific evacuation messages regarding this site from DFES or other emergency personnel will override the above actions.

2. Responsibilities

The following outlines who has responsibility for implementing the emergency procedures in the event of a bushfire.

Table 2: Staff requirements	in event of bushfire	emergency
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Position	Name of Person	Building/area of Responsibility	Responsibility	Phone Number
Facility Manager	<mark>ТВС</mark>	Whole Facility	Contact with DFES; Evacuation of staff and students	<mark>твс</mark>
Chief Fire Warden	TBC	Whole of facility	Contact with DFES Shelter-in-place plan enacted if required: Account for location of all patrons, staff and visitors	TBC
Secondary Fire Warden	TBC	Whole of facility	All doors and windows closed; Account for all patrons	TBC
Gardener/landsc ape contractor	TBC	Outside Grounds	Irrigation system enabled if impact of fire imminent; Maintenance of landscaping as per Section 4 of this BEEP	TBC

3. Emergency Contacts

3.1 Emergency External Contacts

Name Organisation	Office/Contact	Contact Details		
Fire, Police, Ambulance	Fire or Emergency	000		
Department of Fire & Emergency Services	Emergency information	13 33 37 (13 DFES)		
Emergency WA	Warnings and Incidents	www.emergency.wa.gov.au		
SES	Emergency Assistance	132 500		
Police Station	Mundijong	(08) 9526 5111		
Armadale Heath Service	Local Hospital	(08) 9391 2000		
Bureau of Meteorology (BoM)	Recorded Information	1300 659 213		

3.2 Emergency Internal Contacts

Name or Organisation	Office/Contact	Contact Details
ТВС	Facility Manager	TBC
TBC	Chief Fire Warden	твс
<mark>ТВС</mark>	Secondary Fire Warden	<mark>твс</mark>

4. Bushfire Preparedness, Awareness and Pre-Emptive Procedures

The following actions are to be undertaken by proposed childcare centre at the specified times.

4.1 Ongoing actions (year-round)

Actions with regards to landscaping within the childcare centre grounds have been developed with reference to *Standards for Asset Protection Zones (WAPC, 2021)*. The following items should be checked prior to November of each year:

- Fences within the APZ:
 - Should be constructed from non-combustible materials or bushfire-resisting timber referenced in Appendix F of AS 3959.
- Fine fuel load (Combustible, dead vegetation matter <6 millimetres in thickness):
 - Should be managed and removed on a regular basis to maintain a low threat state;
 - Should be maintained at <2 tonnes per hectare (on average); and
 - Mulches should be non-combustible (e.g. stone, gravel or crushed mineral earth) or wood mulch >6 millimetres in thickness.
- Trees (>6 metres in height):
 - Trunks at maturity should be a minimum distance of six metres from all elevations of the building;
 - Branches at maturity should not touch or overhand a building or powerline;
 - Lower branches and loose bark should be removed to a height of two metres above the ground and/or surface vegetation;
 - $\circ~$ Canopy cover within the APZ should be <15% of the total APZ area; and
 - Tree canopies at maturity should be at least five metres apart to avoid forming a continuous canopy. Stands of existing mature trees with interlocking canopies may be treated as an individual canopy provided that the total canopy cover within the APZ will not exceed 15 per cent and are not connected to the tree canopy outside the APZ.
- Shrub and scrub 0.5 metres to six metres in height (shrub or scrub >6 metres in height are to be treated as trees):
 - Should not be located under trees or within three metres of buildings;
 - Should not be planted in clumps >5 square metres in area; and
 - Clumps should be separated from each other and any exposed window or door by at least 10 metres.
- Ground covers < 0.5 metres in height (ground covers > 0.5 metres in height are to be treated as shrubs):
 - Can be planted under trees but must be maintained to remove dead plant material, as prescribed in 'Fine fuel load' above; and
 - Can be located within two metres of a structure, but three metres from windows or doors if >100 millimetres in height.
- Grass:
 - Grass should be maintained at a height of 100 millimetres or less, at all times; and

- Wherever possible, perennial grasses should be used and well-hydrated with regular application of wetting agents and efficient irrigation.
- Defendable space:
 - Within three metres of each wall or supporting post of a habitable building, the area is kept free from vegetation, but can include ground covers, grass and non-combustible mulches as prescribed above.
- LP Gas Cylinders:
 - Should be located on the side of a building furthest from the likely direction of a bushfire or on the side of a building where surrounding classified vegetation is upslope, at least one metre from vulnerable parts of a building;
 - The pressure relief valve should point away from the house;
 - No flammable material within six metres from the front of the valve; and
 - Must site on a firm, level and non-combustible base and be secured to a solid structure.

Detailed information and checklists are available on the DFES website including the '*The Homeowner's Bushfire Survival Manual*'¹ and the '*Fire Chat Bushfire Preparedness Toolkit*'² published by DFES:

^{• 1 &}lt;u>https://www.dfes.wa.gov.au/safetyinformation/fire/bushfire/BushfireManualsandGuides/DFES_Bushfire-Homeowners_Survival_Manual.pdf</u>

² <u>https://www.dfes.wa.gov.au/safetyinformation/fire/bushfire/BushfireManualsandGuides/DFES-Fire-Chat-Bushfire-Preparedness-Toolkit.pdf</u>

4.2 Actions immediately prior to the bushfire season

- Review Emergency Evacuation Plan to ensure details, procedures and contact phone numbers are correct and up to date;
- Ensure employees and other occupants are informed and familiar with the procedures laid out in the Emergency Evacuation Plan;
- Place current version of Bushfire emergency evacuation poster plan (Appendix A) in facility in visible location(s);
- Ensure adequate levels of drinking water are available in the facility in case of emergency;
- Ensure any firefighting equipment (hoses etc.) is serviceable and available;
- Ensure no hazards are present (for example, rubbish piles) that could contribute to increased fire intensity;
- Ensure property access is kept clear and easily trafficable;
- Ensure first aid kits, fire extinguishers, emergency lighting and other emergency resources are current, serviceable and accessible;
- Ensure roof and gutters are free from leaf litter and debris;
- Ensure an emergency evacuation kit has been prepared and is easily accessible by staff;
- Contact with school bus contractors to be made prior to November annually with commitment to provide bus transport in the event of emergency evacuation for up to 125 staff and children. This is to ensure that there is an alternative option for evacuation available in circumstances where evacuation to the maintained oval within the Beenyup Primary School grounds is not deemed safe. School bus contractor to be placed on standby for possible evacuation (min 125 seat capacity) when FDR is Extreme or higher; and
- Brief all staff on the bushfire evacuation procedures with updated advice provided when fire warnings are issued by Emergency Services (currently DFES) for the locality.

4.3 Ongoing actions during the bushfire season

- Maintain the landscaped grounds to the requirements of *Standards for Asset Protection Zones*;
- Maintain compliance with the local government's annual firebreak and fuel load notice issued under section 33 of the *Bush Fires Act 1954*;
- Ensure defendable spaces around buildings and assembly points are maintained; and
- Update contact details of the emergency management team and employees.

4.4 Fire Danger Rating System

Additional critical preparedness actions are to be undertaken under certain Fire Danger Ratings (FDRs) and/or Total Fire Bans as detailed below.

The FDR indicates the potential level of danger should a bushfire start, providing information so that action can be taken to protect lives from the potentially dangerous impacts of bushfires. During the Bushfire Danger Period the forecast FDR for the following day is typically released around 4pm but can be changed as weather conditions unfold. The current and predicted FDR, for the following day, are available via the DFES and BoM websites³.

On Extreme (FBI≥75 and on advice by DFES) and Catastrophic FDRs, the proposed childcare centre will be closed with all staff and students notified in advance.

The Bushfire Preparedness Matrix in Table 3 provides a guide of monitoring actions to be completed during the Bushfire Danger Period to allow situational awareness of potential bushfires and triggers for shelter in place or evacuation. This preparedness matrix and other supporting information is also contained within the Bushfire emergency evacuation poster plan in Appendix A.

ACTION	NO RATING	MODERATE	HIGH	EXTREME	CATASTROPHIC	
Facility Manager or delegate to monitor Emergency WA / or DFES website or ABC Radio for fire incidents		Min. 1 pm	Min. 1 pm, 3 pm	Min. 9 am, 11 am, 1 pm, 3 pm (or more frequently if fire event in locality) Facility closure when FBI≥75 and on advice from DFES.	Facility closed	
Complete building preparedness checks			By 10 am	By 8 am Facility closure when FBI≥75 and on advice from DFES.		
Additional controls – Total Fire Ban	In the event of a Total Fire Ban being declared for the area in which the facility is located the Facility Manager or delegate should check the DFES Emergency WA website (https://www.emergency.wa.gov.au/) at 9 am, 11 am, 1 pm, 3 pm (or more frequently if fire event in locality).					

Table 3: Bushfire Preparedness Matrix

The Shire of Serpentine Jarrahdale and DFES have the ability to put in place Total Fire Bans (TFB) based on the predicted extreme fire weather for any part of a day. The TFB is announced by DFES and with information to be found on their website⁴ or call the TFB hotline on 1800 709 355.

³ http://www.bom.gov.au/wa/forecasts/fire-danger.shtml or https://www.emergency.wa.gov.au/#firedangerratings

⁴ https://www.emergency.wa.gov.au/

5. Emergency Procedures

The primary bushfire management action is EARLY CLOSURE OF THE CHILDCARE CENTRE UNDER EXTREME (FBI≥75 AND ON ADVICE BY DFES) and CATASTROPHIC FIRE DANGER RATINGS.

Procedures for evacuation and shelter-in-place are below. Any direct and specific evacuation messages regarding this site from DFES or other emergency personnel will override these procedures.

5.1 Evacuation

The primary action in the event of a bushfire impacting the Childcare Centre is to **EVACUATE OFF-SITE** (ONLY IF THE FIRE IS WITHIN VEGETATION TO THE SOUTH OF ORTON ROAD AND TIME TO BUSHFIRE ARRIVAL IS GREATER THAN 60 MINUTES OR AS OTHERWISE ADVISED BY EMERGENCY SERVICES).

If off-site evacuation becomes a viable option, the recommended evacuation point is Beenyup Primary School, approximately a 350 m walk to the north (refer to Appendix A for preferred route).

A bus contractor must be placed on standby to ensure that there is an alternative option for evacuation available in circumstances where evacuation to the maintained oval within the Beenyup Primary School grounds is not deemed safe and evacuation to an alternative off-site location can be undertaken safely as advised by DFES.

5.1.1 Evacuation trigger

In the event of a bushfire occurring within the area, the trigger to enact **EVACUATION PROCEDURES** OCCURS WHEN DFES ISSUE A WATCH & ACT ALERT FOR THE AREA IN WHICH THE CHILDCARE CENTRE IS LOCATED AND THE FIRE IS WITHIN VEGETATION TO THE SOUTH OF ORTON ROAD <u>AND THERE IS</u> <u>SUFFICIENT TIME TO EVACUATE SAFELY</u>.

On the issue of this alert, the relevant actions in Table 4 are to be undertaken.

5.2 Shelter-in-place

In the event of bushfire impacting the Childcare Centre and there has been insufficient time to safely evacuate the children and staff, all occupants will be required to **SHELTER-IN-PLACE** due to the vulnerable nature of the patrons of the facility and the potential time to evacuate.

The Childcare Centre is located in an area subject to a Bushfire Attack Level (BAL) rating of BAL-12.5. The building will be constructed to BAL-19 standard to provide appropriate protection from bushfire attack.

5.2.1 Shelter-in-place triggers

In the event of a bushfire occurring within the area, the trigger to enact **SHELTER-IN-PLACE PROCEDURES OCCURS WHEN DFES ISSUE:**

• A WATCH & ACT ALERT FOR THE AREA IN WHICH THE CHILDCARE CENTRE IS LOCATED AND THE FIRE IS WITHIN ANY VEGETATION TO THE EAST OF LAWRENCE WAY, NORTH OR WEST OF THE SITE;

- A WATCH & ACT ALERT FOR THE AREA IN WHICH THE CHILDCARE CENTRE IS LOCATED AND THE FIRE IS WITHIN VEGETATION TO THE SOUTH OF ORTON ROAD <u>AND THERE IS INSUFFICIENT</u> <u>TIME TO EVACUATE SAFELY</u>; OR
- AN EMERGENCY WARNING ALERT FOR THE AREA IN WHICH THE CHILDCARE CENTRE IS LOCATED.

On the issue of these alerts, the relevant actions in Table 4 are to be undertaken.

5.3 Bushfire warning system and alerts

The following actions Table 4 are to be undertaken in addition to the Bushfire Warning instructions issued by DFES.

Off-site evacuation is always safer, provided adequate time is available to complete it safely. Confirm with Lead Agency (DFES or other Emergency Service) prior to evacuating and follow all directions. Sheltering on site is a last resort option, where there is inadequate time to evacuate the site safely.

Table 4: Evacuation process

ALERT	DESCRIPTION	ACTION
Advice	A fire has started but there is no known danger, this is general information to keep you informed and up to date with developments.	 If a fire is spotted, report immediately to 000 and then Facility Manager; Establish regular communication between the Facility Manager or delegate for the facility and all staff, contractors and visitors to provide awareness of potential bushfire threat; Facility Manager or delegate to inform parents/guardians of the bushfire threat and advise them not to attend the Childcare Centre and to keep updated with the DFES advice via Emergency WA websites; and Continually monitor DFES alerts for change in conditions and advice and prepare for evacuation.
Watch and Act	There is a possible threat to lives and homes. Conditions are changing, you need to leave the area or prepare to actively defend.	 WATCH AND ACT WITH FIRE IN VEGETATION TO THE SOUTH OF ORTON ROAD AND THERE IS SUFFICIENT TIME TO EVACUATE SAFELY If a fire is spotted, report immediately to 000 and then Facility Manager; Request information from DFES regarding bushfire time to arrival and if off-site evacuation to the Beenyup Primary School should be undertaken; Facility Manager or delegate to nominate a sole liaison officer to contact DFES immediately to determine appropriate course of action and inform all staff, contractors and visitors; All Occupants to stay indoors and prepare for evacuation; Facility Manager or delegate to advise on evacuation to offsite location; and All visitors and non-essential contractors to be asked to leave the facility if safe to do so. WATCH AND ACT WITH FIRE IN VEGETATION TO THE SOUTH OF ORTON ROAD AND THERE IS INSUFFICIENT TIME TO EVACUATE SAFELY Follow the steps outlined below for WATCH AND ACT WITH FIRE IN VEGETATION TO THE EAST OF LAWRENCE WAY, NORTH OR WEST OF THE SITE WATCH AND ACT WITH FIRE IN VEGETATION TO THE EAST OF LAWRENCE WAY, NORTH OR WEST OF THE SITE WATCH AND ACT WITH FIRE IN VEGETATION TO THE EAST OF LAWRENCE WAY, NORTH OR WEST OF THE SITE WATCH AND ACT WITH FIRE IN VEGETATION TO THE EAST OF LAWRENCE WAY, NORTH OR WEST OF THE SITE WATCH AND ACT WITH FIRE IN VEGETATION TO THE EAST OF LAWRENCE WAY, NORTH OR WEST OF THE SITE WATCH AND ACT WITH FIRE IN VEGETATION TO THE EAST OF LAWRENCE WAY, NORTH OR WEST OF THE SITE Facility Manager to ensure all occupants are located indoors, onsite within the Shelter in Place building (within a room(s) with two exits (with at least one of these exits leading outside), furthest from the fire front); Ensure all windows/doors are closed; All flammable material and equipment are removed away from windows, doors and air-conditioner units; and Instruct all staff to prepare the facility and occupants for poten

ALERT	DESCRIPTION	ACTION
Emergency Warning	You are in danger as your area will be impacted by fire. You need to take immediate action to survive. Listen carefully as you will be advised whether you can leave the area or if you must shelter where you are as the fire burns through your area. An emergency warning may be supported with a siren sound called the Standard Emergency Warning Signal (SEWS). These factors should be reviewed on a regular basis as they may change at any time and without notice.	 Facility Manager or delegate to contact 000 to infom shelter in place has been enacted and request further instructions; Facility Manager to ensure all occupants are located indoors, onsite within the Shelter In Place building (within a room(s) with two exits (with at least one of these exits leading outside), furthest from the fire front); Ensure all windows/doors are closed; All flammable material and equipment are removed away from windows, doors and air-conditioner units; and Instruct all staff to prepare the facility and occupants for potential bushfire impacts.
All clear	The danger has passed, and the fire is under control, but you need to remain vigilant in case the situation changes. It may still not be safe to return.	 If a fire is spotted, report immediately to 000 and then Facility Manager; and Remain vigilant and ensure regular communication is established between the Facility Manager or delegate and all occupants to confirm personal locations and consider evacuation strategies in the event of a change in warning level. Facility Manager to contact parents/guardians and advise them not to attend the Childcare Centre unless DFES advice indicates otherwise.

Where there is sufficient time to evacuate safely off-site evacuation is to occur as follows (or otherwise if advised by emergency services):

- All occupants are to assemble ready for evacuation with youngest children to leave first;
- All occupants are to relocate on foot to the off-site Evacuation Location, currently nominated as the Beenyup Primary School;
- Allow for 60 minutes to assemble all occupants (including children, staff and visitors) and travel by foot to the Beenyup Primary School. This is a conservative estimate that allows for fire detection, pre-movement, movement and evacuation as per the Australia Fire Engineering Guidelines (ABCB, 2021). Refer to section 1.1 of this BEEP for details of timings this estimate has been based on. Obtain further advice from DFES or the local emergency services once at the Beenyup Primary School.

In circumstances where evacuation to the maintained oval within the Beenyup Primary School grounds is not deemed safe, all occupants are to leave the site via bus in the direction to the nominated evacuation centre as advised by emergency services. Evacuation well in advance of a fire's predicted arrival time is safer than remaining on-site.

6. Recovery

Following a bushfire emergency event impacting on the Childcare Centre, the following actions should be undertaken:

- Ensure the safety of all people and seek medical assistance for those requiring it;
- If off-site evacuation occurred, no person should re-enter building until it is deemed safe to do so (this may be advised by emergency services and power/gas supply technicians);
- Follow the directions of emergency services personnel at all times;
- The fire warden (or person responsible) to arrange the movement of occupants back to the facility;
- All occupants are to be accounted for on their return;
- Inform the police/emergency service of the return of persons to the Childcare Centre;
- Review the Emergency Evacuation Plan for effectiveness, make note of weaknesses and amend as necessary; and
- In the event of the Childcare Centre being impacted by a bushfire, critical incident stress support should be provided to all staff, children and parents/guardians.

7. References

ABCB, 2014, Design and Construction of Community Bushfire Refuges: Information Handbook

Australian Building Codes Board (ABCB). 2021. Australian Fire Engineering Guidelines. ABCB.

Eco Logical Australia. 2024. Bushfire Management Plan. Development Application. Childcare Centre – Lot 631 (108) Lawrence Way, Byford 6122. Prepared for Planning Solutions.

- Western Australian Planning Commission (WAPC). 2021. Guidelines for Planning in Bushfire Prone Areas Version 1.4 (including appendices), WAPC, Perth.
- Western Australian Planning Commission (WAPC). 2019. A guide to developing a Bushfire Emergency Evacuation Plan, October 2019

Appendix A : Bushfire Emergency Evacuation Poster Plan

1 Location details			4 Evacuation r	renared	ness				9. What to do if caught in a
 Location details Facility type: Childcare Centre Location: Lot 631 (108) Lawrence Way, Byfor Infrastructure: A Childcare Centre and associated Occupation / Visitation (number of Maximum staff and students: 125 products and students: 125 products and students: 125 products and students: 125 products and students and students and students and students and students products and students products and students and students products and students are students and students and students are students and students and students are students and students are students and students are students are students and students are students ar	outdoor facilities. of people): people + some visitors		completed durin potential bushfir preparedness pro the BEEP report. The FDR indicate information so t dangerous impac for the following weather condition available via the On Extreme (FBI	eparednes g the Bus es and tr ocedures to es the pote that actio its of bush g day is t ns unfold. DFES and ≥75 and o	s Matrix p shfire Dang iggers for o be enacte ential level n can be fires. Durin ypically re The currer d BoM web	ger Perioc shelter in ed at certa l of dange taken to ng the Bus eleased ar ht and prec osites.	guide of monitoring d to allow situational n place or evacuation in periods of the year r should a bushfire s protect lives from the hfire Danger Period the ound 4pm but can be dicted FDR, for the fol	awareness of on. Additional are provided in tart, providing the potentially be forecast FDR be changed as lowing day, are	 Do not stand on the root with roofs than suffering burns Patrol the outside of the build or spark can reach your hor Just before the fire arrives, Move any firefighting equipt
Swan Coastal South		(Centre will be clo	osed.					Inside your buildingContinue to drink water so y
2. Communications Mobile:		Ŀ.	ACTION	NO RATING	MODERATE	HIGH	EXTREME	CATASTROPHIC	 Close doors, windows, vent entering
	ver, mobile communications can become unreliable due to the volume of usage	ò	Facility Manager or delegate to monitor Emergency WA / or DFES website or ABC Radio for fire incidents		Min. 1 pm	Min. 1 pm, 3 pm	Min. 9 am, 11 am, 1 pm, 3 pm (or more frequently if fire event in locality); and Facility closure when FBI275 and on advice from DFES.	Facility closed	 Put tape across the inside o Shut off gas at the meter or Move furniture away from the Fill sinks, bath and buckets Place wet towels around wir Put a ladder next to the acc During the fire
 ABC: 720 AM Internet Sites: Preparing your Property - 			Complete building preparedness checks			By 10 am	By 8 am Facility closure when FBI≥75 and on advice from DFES.		 When the fire arrives, go in Ensure you have torches rease
 <u>https://www.dfes.wa.gov.au/safetyi</u> <u>Bushfire_Factsheet-Calendar_for_f</u> Emergency WA - <u>www.emergency</u> 	.wa.gov.au	-	Additional controls – Total Fire Ban	Fac	cility Manager or	delegate should /a.gov.au/) at 9	red for the area in which the facili d check the DFES Emergency WA am, 11 am, 1 pm, 3 pm (or more in locality).	website	 Patrol the inside of the build Remember - if your life is a After the fire Once the fire has passed, you
 DFES on Facebook - <u>www.facebool</u> DFES on Twitter - <u>www.twitter.com</u> 				I					any part of the building whiteAn ember or spark from a fir
		Į	5. Evacuation t	riggers					passed and small spot fires
3. Contacts	· · · · · · · · · · · · · · · · · · ·		The primary eva	icuation o	ption is to	Evacuate	e Off-Site.		What to do if caught in a buTry to move on to bare or bu
Fire reporting	000		If off-site evecue	tion is a v	iahle ontio	n the rec	commended evecuati	on noint is the	feasible find the largest bar
Facility Manager	TBC TBC		If off-site evacuation is a viable option, the recommended evacuation point is the Beenyup Primary School Oval, approximately 350 m walk to the north.					 Do not run uphill or away from the fire arrives. Try and pos Move across the slope out of 	
DFES (Emergency Information) 13 33 37							thin the Childcare Ce	ntre Building if	back of the fire or onto burr
SES (Emergency Assistance)	132 500		INETE IS INSUTTICIE	ent time to	o sarely ev	acuate the	e children and staff.		 Do not attempt to run throu means that the flames are le
WA Police	000			SEE EVACUATION DECISION MATRIX (OVERLEAF) FOR TRIGGERS AND					on the flanks of the fire.
WA Ambulance	000		PROCEDURES.					 Lulls in the fire often result in the burnt ground boycond 	

6. Evacuation Procedures

1300 659 213

Bureau of Meteorology (BoM)

Recorded Information

Actions for offsite evacuation and shelter-in-place have been aligned to triggers associated with bushfire warnings and are detailed in the evacuation decision matrix (overleaf).

Any direct and specific evacuation messages regarding this site from DFES or other emergency personnel will override these procedures.

7. Children and staff welfare during shelter in place

 Staff will be in charge of onsite children welfare. Serious medical needs will require emergency response via 000.

8. Building Preparedness Checks

- Include such tasks as ensuring reduced fuel loads around buildings, routine maintenance is up to date including cleaning of gutters, fire breaks are in place, and water supply is available.
- Detailed information and checklists are available on the DFES website including the 'The Homeowner's Bushfire Survival Manual' and the 'Fire Chat Bushfire Preparedness Toolkit' published by DFES https://www.dfes.wa.gov.au/safetyinformation/fire/bushfire/BushfireManualsand

Guides/DFES_Bushfire-Homeowners_Survival_Manual.pdf

https://www.dfes.wa.gov.au/safetyinformation/fire/bushfire/BushfireManualsand Guides/DFES-Fire-Chat-Bushfire-Preparedness-Toolkit.pdf; and

 Additional preparedness procedures to be enacted at certain period of the year are provided in the BEEP report.

a bushfire

guidelines* on what to do if caught in a bushfire in a building or on foot. conse involving critical decisions for your survival. cushfire IN A BUI LDI NG

f water so you do not dehydrate sock full of sand/soil will help) and fill your gutters with water ch as outdoor furniture, doormats the valve facing away from the building

ith a hose. In bush fires, often more people are injured by falling from

ilding, putting out any embers and spot fires that may start. An ember ome hours before the fire front arrives s, wet down timber decks and gardens close to the building pment to a place where it will not get burnt.

you do not dehydrate

nts, blinds and curtains to prevent flames, smoke and embers from

of the windows so they stay in place if they break or bottle

he windows to prevent any embers that enter the building from igniting s with water for putting out any fires that may start inside *i*indow and door edges to stop smoke and embers from entering

ccess hole to the roof space so you can check for spot fires.

nside to protect you from the radiant heat ady as it is likely to become completely dark and you will not be able to

lding, including the roof space for sparks and embers at risk, call Triple Zero (000) immediately.

ou may need to patrol the property for hours. Go outside and put out nich is alight.

fire can impact on a building many hours after the main fire front has es can quickly get out of control.

ushfire ON FOOT/ IN VEHICLE

burnt ground at least 100 m from where fire is likely to burn, if this is not are or burnt ground possible

rom the fire unless you know a safe refuge is able to be reached before osition yourself downhill of the on-coming fire.

of the path of the fire front and work your way downslope towards the irnt ground.

ough flames unless you can see clearly behind them. This generally less than 1 metre high and less than 1 to 2 metres deep at the back or

Lulls in the fire often result in the flames in these parts being low enough to step or run through to

When conditions become severe use every possible means to protect yourself from radiation. On bare ground cover yourself, use wheel ruts, depressions, large rocks or logs to give protection. Take refuge in ponds, running streams or culverts, but behind solid objects such a rock

Remain calm and do not run blindly from the fire. If you become exhausted, you are much more prone to heat stroke and you may easily overlook a safe refuge. Consider an alternative course of

adapted from NSW RFS bushfire training modules.

the burnt ground beyond.

From 1 September 2022, Australia's Fire Danger Rating System will be improved and simplified to make it easier for you to make decisions to stay safe on days of fire danger risk.

The move to a simpler system is backed by improvements in science, which will mean we can better predict areas of greater risk on days of fire danger.

Across the country fire and emergency services are applying nationally consistent colours, signs and terminology. This means that wherever you go in

Australia, and whatever the season or fuels you're surrounded with, you can understand the level of threat and what you need to do to stay safe.

Extreme Take action now to protect life and property

Catastrophic For your survival, leave bushfire risk areas

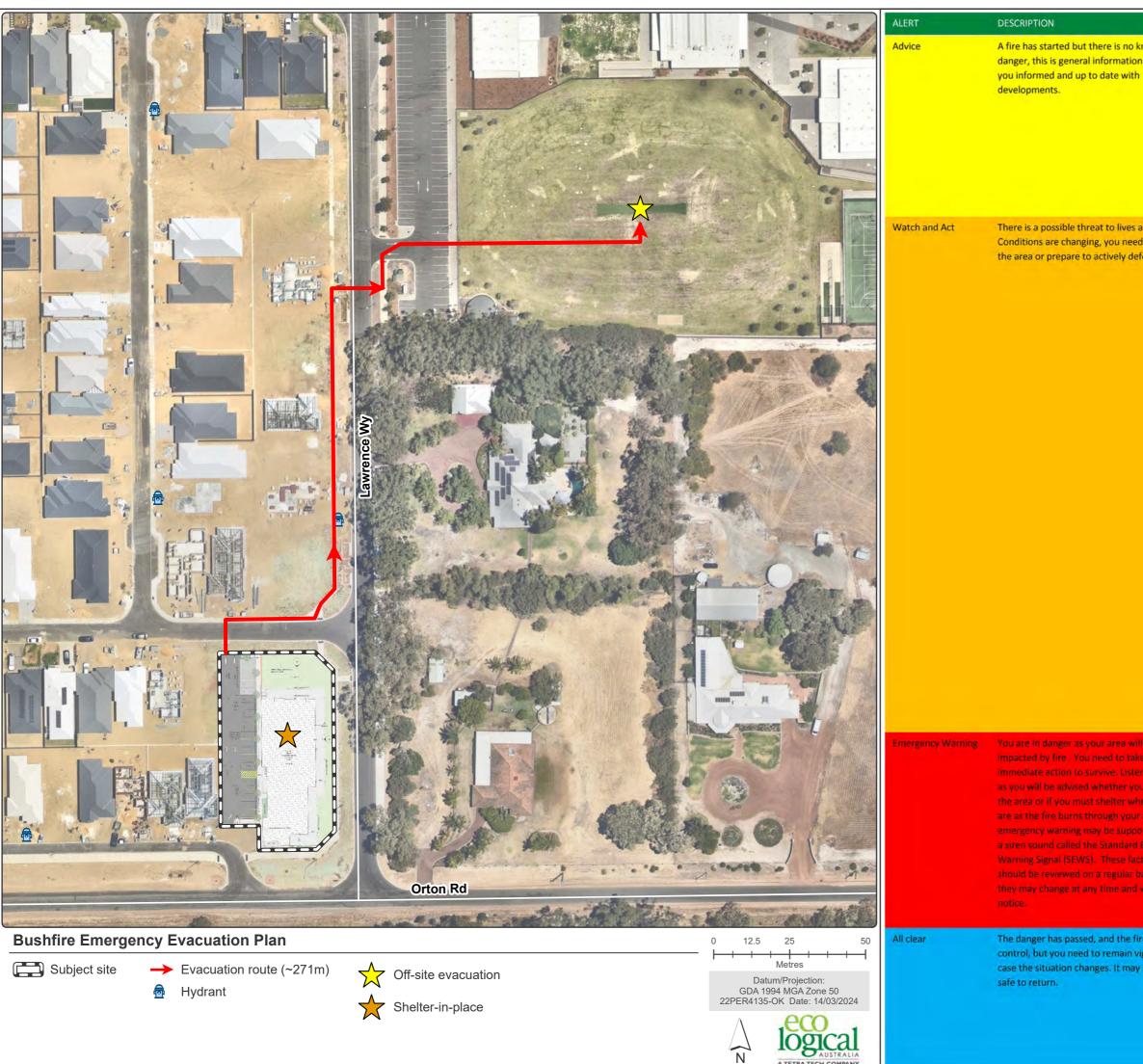
Moderate Plan and prepare

High Be ready to act

action

DURING A BUSHFIRE



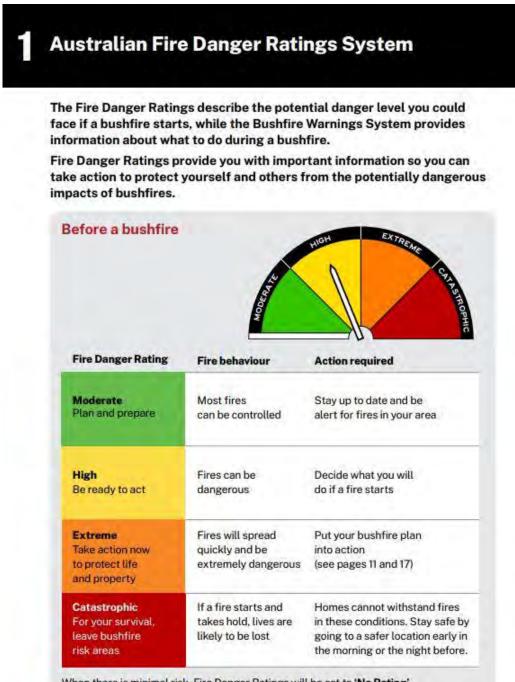


A TETRA TECH

	ACTION
nown n to keep	If a fire is spotted, report immediately to 000 and then Facility Manager; Establish regular communication between the Facility Manager or delegate for the facility and all staff, contractors and visitors to provide awareness of potential bushfire threat; Facility Manager or delegate to inform parents/guardians of the bushfire threat and advise them not to attend the Childcare Centre and to keep updated with the DFES advice via Emergency WA websites; and Continually monitor DFES alerts for change in conditions and advice and prepare for evacuation.
and homes. d to leave fend.	 WATCH AND ACT WITH FIRE IN VEGETATION TO THE SOUTH OF ORTON ROAD AND THERE IS SUFFICIENT TIME TO EVACUATE SAFELY If a fire is spotted, report immediately to 000 and then Facility Manager; Request information from DFES regarding bushfire time to arrival and if off-site evacuation to the Beenyup Primary School should be undertaken; Facility Manager or delegate to nominate a sole liaison officer to contact DFES immediately to determine appropriate course of action and inform all staff, contractors and visitors; All Occupants to stay indoors and prepare for evacuation; Facility Manager or delegate to advise on evacuation to offsite location; and All visitors and non-essential contractors to be asked to leave the facility if safe to do so. WATCH AND ACT WITH FIRE IN VEGETATION TO THE SOUTH OF ORTON ROAD AND THERE IS INSUFFICIENT TIME TO EVACUATE SAFELY Follow the steps outlined below for WATCH AND ACT WITH FIRE IN VEGETATION TO THE EAST OF LAWRENCE WAY, NORTH OR WEST OF THE SITE WATCH AND ACT WITH FIRE IN VEGETATION TO THE EAST OF LAWRENCE WAY, NORTH OR WEST OF THE SITE WATCH AND ACT WITH FIRE IN VEGETATION TO THE EAST OF LAWRENCE WAY, NORTH OR WEST OF THE SITE Facility Manager or delegate to contact 000 to inform shelter in place has been enacted and request further instructions; Facility Manager to ensure all occupants are located indoors, onsite within the Shelter in Place building (within a room(s) with two exits (with at least one of these exits leading outside), furthest from the fire front); Ensure all windows/doors are closed; All flammable material and equipment are removed away from windows, doors and air-conditioner units; and Instruct all staff to prepare the facility and occupants for potential bushfire impacts.
I be e n carelully u can leave ere you area. An orted with Emergency tors rasis as without re is under igilant in estill not be	Facility Manager or delegate to contact 000 to inform shelter in place has been enacted and request further instructions; Facility Manager to ensure all occupants are located indoors, onsite within the Shelter in Place building (within a room(s) with two exits (with at least one of these exits leading outside), furthest from the fire front); Ensure all windows/doors are closed; All Hammable material and equipment are removed away from windows, doors and air-conditioner units; and Instruct all staff to orepare the facility and occupants for potential bushfire impacts. If a fire is spotted, report immediately to 000 and then Facility Manager; and Remain vigilant and ensure regular communication is established
	between the Facility Manager or delegate and all occupants to confirm personal locations and consider evacuation strategies in the event of a change in warning level. Facility Manager to contact parents/guardians and advise them not to attend the Childcare Centre unless DFES advice indicates otherwise.

Appendix B : DFES Fire Danger Rating and Warning Systems

Refer to DFES Fire Chat Bushfire Preparedness Tool kit and DFES website for further details⁵



When there is minimal risk, Fire Danger Ratings will be set to '**No Rating**'. At this level, fires are not expected to spread in a fast or life-threatening way.

 $^{{}^{5}}https://publications.dfes.wa.gov.au/publications/bushfire-preparedness-toolkit$

2 Australian Warning System – Bushfire

During a bushfire, emergency services will issue a warning if the fire is impacting, or likely to impact the community.

There are three levels of warning. These change to reflect the increasing risk to your life or property, and the decreasing amount of time you have until the fire arrives.

During a bushfire

	EMERGENCY WARNING
	An out of control fire is approaching fast. There is a threat to lives and homes and you need to take immediate action to survive.
	You must seek shelter or leave now if it is safe to do so.
	WATCH AND ACT
	If your plan is to leave, leave now. If your plan is to stay, get ready to actively defend.
	Only stay and defend if you are mentally and physically prepared.
	ADVICE
	A fire has started but there is no immediate threat to lives or homes. Stay alert and watch for signs of fire.
	Be aware and keep up to date.
	wait for a text message or a knock on the door. your own decision on when to leave.
Emergency WA	d at emergency.wa.gov.au is the primary and most up to date gency information for:
Ourrent war	nings
5 Fire Danger	Ratings
Total Fire Ba	ins
See back cover	for other information sources.





Beenyup Grove Childcare Centre, Environmental Noise Emission Report

Reference: P191218RP1



Document Information

Project	Beenyup Grove Childcare Centre	
Client	Forest Cave Beach Unit Trust	
Report title	Environmental Noise Emission	
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Revision Table

Report revision	Date	Comments
0	24 February, 2023	Draft Issued to client
1	11 March, 2024	Updated site layout
2	13 March 2024	Finalised

Beenyup Grove Childcare Centre Environmental Noise Emission P191218RP1

Glossary

A-weighting	A spectrum adaption that is applied to measured noise levels to represent human hearing. A-weighted levels are used as human hearing does not respond equally at all frequencies.
dB	Decibel—a unit of measurement used to express sound level. It is based on a logarithmic scale which means a sound that is 3 dB higher has twice as much energy. We typically perceive a 10 dB increase in sound as a doubling of that sound level.
Frequency (Hz)	The number of times a vibrating object oscillates (moves back and forth) in one second. Fast movements produce high frequency sound (high pitch/tone), but slow movements mean the frequency (pitch/tone) is low. 1 Hz is equal to 1 cycle per second.
L ₉₀	Noise level exceeded for 90 % of the measurement time. The $L_{\rm 90}$ level is commonly referred to as the background noise level.
L10	Noise level exceeded for 10 % of the measurement time. The L_{10} level represents the typical upper noise level and is often used to represent traffic or industrial noise emission.
LA10.adj	Adjusted L _{A10} . Adjustment based on obvious tonality, impulsive or Modulation characteristics in the audible noise at a receiver point. Based on the adjustment methodology in Environmental Protection (Noise) Regulations 1997 Regulation 9
LA1,adj	Adjusted, A-weighted noise level exceeded for 1 % of the measurement time. The $L_{A1, adj}$ level represents mostly short duration, high level sound events.
L _{Amax,adj}	Adjusted, A-weighted maximum instantaneous noise level.
L _{Aeq}	A-weighted Equivalent Noise Level–Energy averaged noise level over the measurement time.
R _w	Weighted Sound Reduction Index–A laboratory measured value of the acoustic separation provided by a single building element (such as a partition). The higher the R_w the better the noise isolation provided by a building element.
$R_w + C_{tr}$	A measure of the sound insulation performance of a building element with a $C_{\rm tr}$ spectrum adaptation term placing greater emphasis on the low frequency performance.
Reverberation Time (RT)	Of a room, for a sound of a given frequency or frequency band, the time that would be required for the reverberantly decaying sound pressure level in the room to decrease by 60 decibels.

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1. Executive Summary

Reverberate Consulting has been commissioned by Forest Cave Beach Pty Ltd as trustee of the Forest Cave Beach Unit Trust, to provide acoustic advice relating to the proposed Beenyup Grove Childcare Centre at 108 Lawrence Way, Byford. This report is based on the Brown Falconer drawing 2809 02, Revision E, dated 22 February 2024 (refer site plan Appendix C). The proposed operating hours of the centre are between 6:30 am and 6:30 pm Monday to Friday, with no outdoor play before 7:00 am.

The main acoustical issues covered are the environmental noise emission from the site, as received at current and future adjacent residential properties along Maive St, Lawrence Way and along Orton St from:

- outdoor play areas (after 7:00 am)
- mechanical plant (before 7:00 am)
- carpark activity (before 7:00 am)

It is found that noise barriers as shown in Appendix C, and the noise control measures in Appendix A are recommended to control noise emission from the site

This report details the results of the acoustic assessment.

2. Site and Surrounds

The proposed childcare centre is located on a parcel of land bounded by Lawrence Way, Maive St, and Orton Road, refer to the Site Plan Figure 1.

The dominant noisy activity for the site is caused by the following noise sources:

- Parent vehicle movements in the carpark (6.30 am 6.30 pm)
- Mechanical plant and equipment (6.30 am 6.30 pm)
- Child Care centre children playing outdoors (7.00 am to 6.30 pm)
 - \circ 16 x 0-2 year olds
 - o 40 x 2-3 year olds
 - o 40 x 3-5 year olds

The site is adjoining residentially zoned land on the west, with additional residential areas on the other three sides, separated by roads.



Figure 1: Childcare Site Plan

3. Noise Assessment Criteria

3.1 Environmental Protection Act

The Environmental Protection Act (1986) provides for the prevention, control and abatement of pollution and environmental harm. This Act limits environmental noise in Section 3 (3) as follows:

For the purposes of this Act, noise is taken to be unreasonable if -

(a) it is emitted, or the equipment emitting it is used, in contravention of –

(i) this Act; or
(ii) any subsidiary legislation made under this Act; or
(iii) any requirement or permission (by whatever name called) made or given by or under this Act;

or

(b) having regard to the nature and duration of the noise emissions, the frequency of similar noise emissions from the same source (or a source under the control of the same person or persons) and the time of day at which the noise is emitted, the noise unreasonably interferes with the health, welfare, convenience, comfort or amenity of any person; or

(c) it is prescribed to be unreasonable for the purposes of this Act.

Reverberate has used the above legislation to assess the noise impact from the site. More particularly, noises which have a distinct character, and are different to the ambient noise environment are assessed under the subsidiary legislation; the Environmental Protection (Noise) Regulations 1997. Such an assessment has been undertaken for noise sources such as child noise in outdoor areas and vehicle door noise in carparks.

Other types of noises from the site, such as that generated by vehicles driving, or manoeuvring in the carpark, have not been assessed under the Regulation. Reference is drawn to Section 3 (3) (b) of the Act which requires the assessment to have regard to the nature, duration, and time of day of such noise emissions and the frequency of similar noise emissions from the same source. It is noted that the adjoining roads contain more traffic than accesses the study site so the movement of vehicles on child care site, per se, is not considered characteristically different to that already in the area.

3.2 Environmental Protection (Noise) Regulations 1997

The Environmental Protection (Noise) Regulations 1997 (the Regulations) provide limits for acceptable noise from operations and activities. The Regulations specify the maximum permissible noise levels (termed Assigned Levels) at noise sensitive premises, caused by excessive nearby noise, during various times of the day.

The Assigned Levels have been calculated for all properties using the method shown in Appendix B. The resultant Assigned Levels are presented below in Table 1 and are applicable at the adjoining neighbouring residential sites.

Due to the proposed hours of operation of the outdoor play area, the day-time period is the critical assessment period. The only exception is for carpark and mechanical plant activity prior to 7:00 am.

Receiving	Time of Day	Assigned Level (LAmax 65 60 55
Premises	Time of Day	L _{A10}	L _{A1}	LAmax
	0700 to 1900 hours Monday to Saturday	45	55	65
Noise Sensitive	0900 to 1900 hours Sunday and public holidays	40	50	L _{Amax} 65 60
Premises -	1900 to 2200 hours all days	40	50	55
Highly Sensitive	2200 hours on any day to 0700 hours Monday to Saturday and 0900 hours Sunday and public holidays	35	45	55

Table 1: Environmental noise emission criteria (Assigned Levels)

These criteria are applicable to the dominant noises as follows:

- child noise (daytime LA10 assigned level 45 dB),
- mechanical services noise (night-time LA10 assigned level of 35 dB) and
- carpark activity such as vehicle door closing (night-time L_{Amax} assigned level of 55 dB).

Note that adjustments are applied to the noise sources for a variety of characteristics. Where tonality, impulsiveness or modulation is present at the nearest neighbours then these noises are additionally adjusted where the characteristics cannot be removed from the noise signature.

It is expected that the sound of the vehicle door closing would be perceived as impulsive at the nearest neighbours and so would attract a 10 dB adjustment. Likewise, the sound of the mechanical services plant could be perceived as tonal and would attract a 5 dB adjustment during potentially quiet, pre-7:00 am periods.

4. Noise Assessment

4.1 Noise sources modelled

Noise emission sources and ground contours were used to develop a 3-D SoundPLAN noise model as shown below in Figure 2. This figure shows the locations of the modelled noise sources, noise barriers, and site & surrounding buildings.

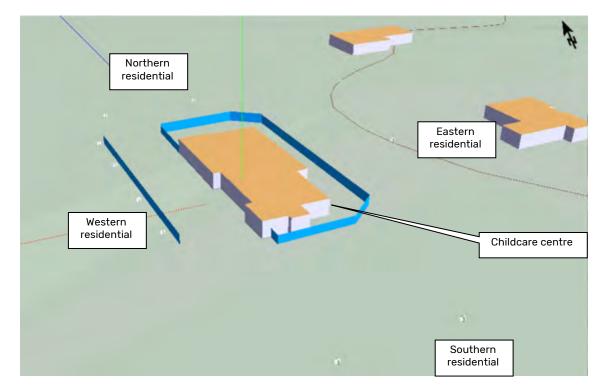


Figure 2 - 3-D SoundPLAN model of childcare centre and Receptor locations

The Childcare Centre has been modelled with the following noise sources:

- Outdoor play area:
 - o 16 x 0-2 year olds
 - o 40 x 2-3 year olds
 - o 40 x 3-5 year olds
- Outdoor mechanical plant
- Car park noise (controlled by door close noise)

The noise emissions per group of children are based on our previous experience, and that of the Association of Australasian Acoustical Consultants [AAAC]¹, and are summarised in Table 2 below.

¹*Guideline for Childcare Centre Acoustic Assessment*, Version 3.0, dated September 2020

Table 2 – L _{A10} Sound Power Levels – children outside					
Per Group of children	Sound Power Level (dB) Reverberate				
10 children (3-5 yo)	86				
10 children (2-3 yo)	84				
10 children (0-2 yo)	77				

The total L_{A10} noise emission from all outdoor air-conditioning units together was 76 dB.

The noise emission from carparking was considered with the sound power level of car door closing being L_{wAmax} = 84 dB. Other vehicular sounds such as engine starting noises and maneuvering within the carpark are quieter than that for door closing. Where car door noise is shown to meet the Regulations, these other noises will also be compliant.

4.2 Noise Forecast and Impact

Computer noise modelling was used to forecast the noise impacts to locations around the site. The software used was SoundPLAN Version 8.2, with the ISO9613 algorithms selected. These algorithms have been used as they allow for the influence of wind, atmospheric stability, barriers, building shielding and ground absorption. It is appropriate for the current configuration of noise sources and receiver locations.

The Input data used in modelling includes

- Meteorological Information;
- Topographical data;
- Buildings, barriers, fences, and other features which may shield noise
- Ground Absorption; and
- Source sound levels.

The following parameters were used as necessary in modelling noise emissions

- Pasquil Stability Factor F
- Temperature 15 °C (pre-7:00 am)
- Temperature 20 °C (post-7:00 am)
- Wind Speed 3 m/s
- Wind Direction Worst case i.e., all directions
- Relative Humidity 50%
- Ground Absorption 0.65 in grassed areas
- 0.10 for paved areas such as roads and carparks

Adjustments were applied for the forecast noise reaching receptor locations. Where evident at the receiving locations, the following adjustments were applied:

- +10 dB where the received noise was determined to have impulsive characteristics
- +5 dB where the received noise was determined to have tonal characteristics

The forecast noise levels at sensitive receivers are summarised in Table 3 to Table 5 below. These forecasts are based on the maximum Sound Power Levels in Section 4.1 above, as well as the successful implementation of the Noise Management Plan in Appendix A.

The corresponding forecast noise levels at the sensitive receiver lots are also shown in noise contour plots Figure 3 to Figure 5

Table 3 - Forecast $L_{A10, adj}$ daytime noise emission levels

	Receiver						
	Lot 441	Lot 466	Lot 489	Lot 491	Eastern Lots	Southern Lot	
Noise Source	Grnd Fl	Grnd Fl					
Child noise	36	40	45	45	45	41	
Mechanical noise*	24	16	12	13	23	34	
Overall	36	40	45	45	45	41	
Assigned Level	45	45	45	45	45	45	
Compliance	Achieved	Achieved	Achieved	Achieved	Achieved	Achieved	

Note * Tonality adjustment applied

Table 4 - Forecast $L_{A10, adj}$ night time noise emission levels

				Receiver		
	Lot 441	Lot 466	Lot 489	Lot 491	Eastern Lots	Southern Lot
Noise Source	Grnd Fl	Grnd Fl				
AC1*	19	11	7	9	18	29
AC2*	20	11	7	8	18	30
AC3*	19	11	7	8	18	30
Overall*	24	16	12	13	23	34
Assigned Level	35	35	35	35	35	35
Compliance	Achieved	Achieved	Achieved	Achieved	Achieved	Achieved

Note * Tonality adjustment applied

Table 5 - Forecast L_{Amax, adj} night-time noise emission levels

				Receiver		
	Lot 441	Lot 466	Lot 489	Lot 491	Eastern Lots	Southern Lot
Noise Source	Grnd Fl	Grnd Fl				
Car 4**	48	51	50	57	35	44
Car 5**	49	52	48	56	32	44
Car 6**	49	53	48	55	32	44
Car 7**	50	53	46	55	32	44
Car 10**	51	52	45	53	30	45
Car 14**	52	50	39	52	30	47
Car 15**	52	49	37	51	30	48
Car 17**	52	47	36	51	30	48
Car 18**	52	48	36	50	30	49
Car 19**	52	47	34	50	30	49
Car 20**	52	47	33	50	30	50
Assigned Level	55	55	55	55	55	55
Compliance	Achieved	Achieved	Achieved	No	Achieved	Achieved

Note * Tonality adjustment applied

** Impulsive adjustment applied



Figure 3: Daytime environmental noise emission prediction (LA10) at 1.4 m above ground level (Assigned Level = 45 dB)

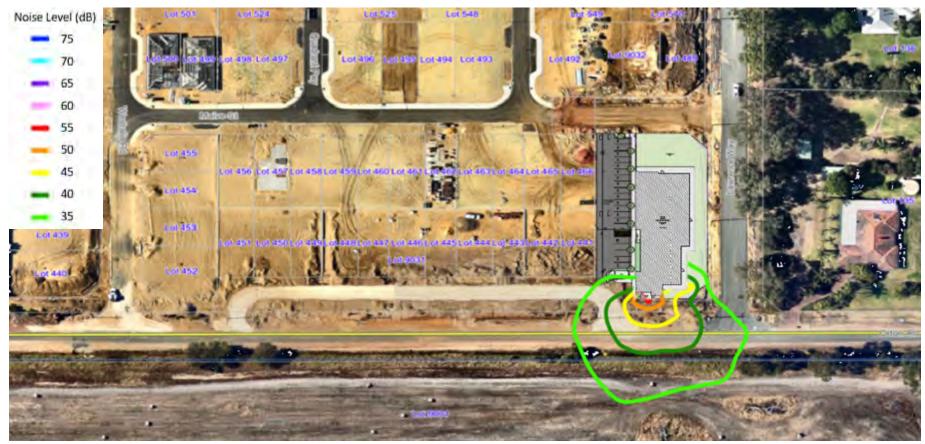


Figure 4: Night-time environmental noise emission prediction (LA10,adj**) at 1.4 m above ground level** (Assigned Level = 35 dB)



Figure 5: Night-time Environmental noise emission prediction (L_{Amax}**) at 1.4 m above ground level** (Assigned Level = 55 dB)

5. Discussion

The results in Section 4.2 show that the overall noise emission levels comply with the Assigned Levels as developed from the Environmental Protection (Noise) Regulations 1997.

The only exception is for carparking in bays #1 to #5 pre-7:00 am.

The noise control measured outlined in Appendices A, C & D are recommended to control noise emissions.

The modelling has used conservative assumptions to determine the forecast noise levels. These assumptions include:

- all mechanical plant, and all children together, are simultaneously making noise, and at full noise emission as noted
- Noise Regulation adjustments are needed for all items as proposed

We consider that these assumptions are conservative, and that it unlikely that these will actually occur. Where the assumptions do not hold, the overall noise emission from the site will reduce to levels below that shown in Section 4.2.

It is noted that the noise control measures recommended in this report will produce sufficient noise control to meet the Environmental Protection (Noise) Regulations 1997 requirements, for the noise sources as outlined. Where it is proposed to install plant or equipment with different noise emission to that identified in this report, we recommend that a detailed noise assessment is conducted at that stage.

Based on the noise sources, arrangement, and the conservative assumptions outlined in this report, the overall noise emission from the site is considered acceptable throughout the night-time operating period (i.e., before 7:00 am) and throughout the day.

6. Conclusion

An assessment of environmental noise emission from the proposed Childcare Centre development has been undertaken.

The forecast noise emission levels have been presented. The recommended treatments to control noise emissions are outlined in the Noise Management Plan (Appendix A) and these treatments have been shown to control environmental noise emission from the site so that compliance is achieved with the Environmental Protection Act (1986) and Environmental Protection (Noise) Regulations 1997.

Any noise sources currently not covered in this report, where emergent on site, may need to be managed and controlled to minimise as far as practicable. In the event that such noises create a noticeable impact, an additional assessment and noise controls may be required at that time.

On the basis of the assessed noise sources, forecast noise emissions and recommended treatments, the environmental noise emission from the site is considered acceptable and we recommend approval for the proposed Childcare Centre.

Appendix A: Noise Management Plan

The elements outlined below are recommended as part of a comprehensive Noise Management Plan. They are recommended for compliance with the Environmental Protection Act 1986 and its subsidiary legislation: The Environmental Protection (Noise) Regulations 1997.

Noise Source or Activity	Requirement/Treatments ²
Barriers	 Noise control barriers are recommended with the minimum heights shown in Appendix C. These barriers are to be gap free along their lengths unless otherwise indicated The minimum construction of barriers up to 1.8m high to be 0.42 mm BMT Colorbond, (or masonry), and taller barriers to be a minimum of 90 mm masonry, or other material with a minimum mass 8.5 kg/m2
Refuse Collection	 Refuse collection is to be carried out in the quietest reasonable and practicable manner Equipment used for refuse collection is the quietest reasonably available Collection to occur between 7:00 am and 700:pm Mon-Saturday, unless the contractor has a Noise Management Plan approved by Council.
Child Noise	 Children not permitted in the outdoor play areas before 7:00 am Noisy activities such as musical instruments, parties, singing, etc to be conducted indoors with the doors and windows closed. A contact phone number for the Centre's director should be made available to neighbours to facilitate communication and to resolve any neighbourhood issues that may arise due to operation of the Centre.
Outdoor Building Services plant	 The total L_{wA10} noise emission from all outdoor plant not to exceed that outlined in Section 4.1 above, without additional treatment. A full review is to be conducted of plant noise after final selections and locations have been finalised

² The treatments outlined in this report are the minimum requirements for noise control. Increased thicknesses, heights, strengthened elements, or alternative treatments, may be required for other non-acoustic reasons including wind loading, weather proofing, buildability, structural stability, safety, or fire-rating

Carpark	 All new grilles or storm water grates in the carpark are to be installed to be tight fitting. Where there is a potential for vehicles to drive over such grates/covers, noise from loose fitting grates is to be avoided. Where there is the potential for such noise source, hard rubber or other durable materials are to be used for cushioning such grates/covers Parents and guardians should be informed of the importance of noise minimisation when entering the site, dropping off or picking up children Carparking bays not permitted for use prior to 7:00 am are identified in Appendix D

Outdoor climbing frames to be positioned behind the tallest barriers on site

Outdoor Play equipment

•

Appendix B: Determination of Assigned Level

The Environmental Protection (Noise) Regulations 1997 (EPR) provide limits for acceptable noise from operations generating excessive noise. The Regulations specify the maximum permissible noise levels (termed assigned levels) at noise sensitive premises, caused by surrounding noises, during various times of the day. Time of day affects the assigned levels for noise-sensitive premises, as follows –

- Lowest levels at night (10:00 pm to 7:00 am any day, or to 9:00 am Sundays and Public Holidays);
- Higher levels during the evenings (7:00 pm to 10:00 pm) and on Sundays and Public Holidays (9:00 am to 10:00 pm); and
- Highest levels during the day (7:00 am to 7:00 pm Monday to Saturday).

The baseline assigned levels from the Regulations are shown below in Table 6.

Assigned Level (dB)		
L _{A10}	L _{A1}	L _{Amax}
45+IF	55+IF	65+IF
40+IF	50+IF	65+IF
40+IF	50+IF	55+IF
35+IF	45+IF	55+IF
60	75	80
60	75	80
65	80	90
	LA10 45+IF 40+IF 40+IF 35+IF 60 60	LA10 LA1 45+1F 55+1F 40+1F 50+1F 40+1F 50+1F 35+1F 45+1F 60 75 60 75

Table 6 - Baseline Assigned Levels

The Assigned Levels above are then increased using an Influencing Factor (IF) as defined in the Regulations. The Influencing Factor is greater than zero where there are significant areas of land uses, within 100 m and 450 m radii of the receptor, including:

- industrial land use zonings;
- commercial zonings; and
- the presence of roads carrying significant traffic.

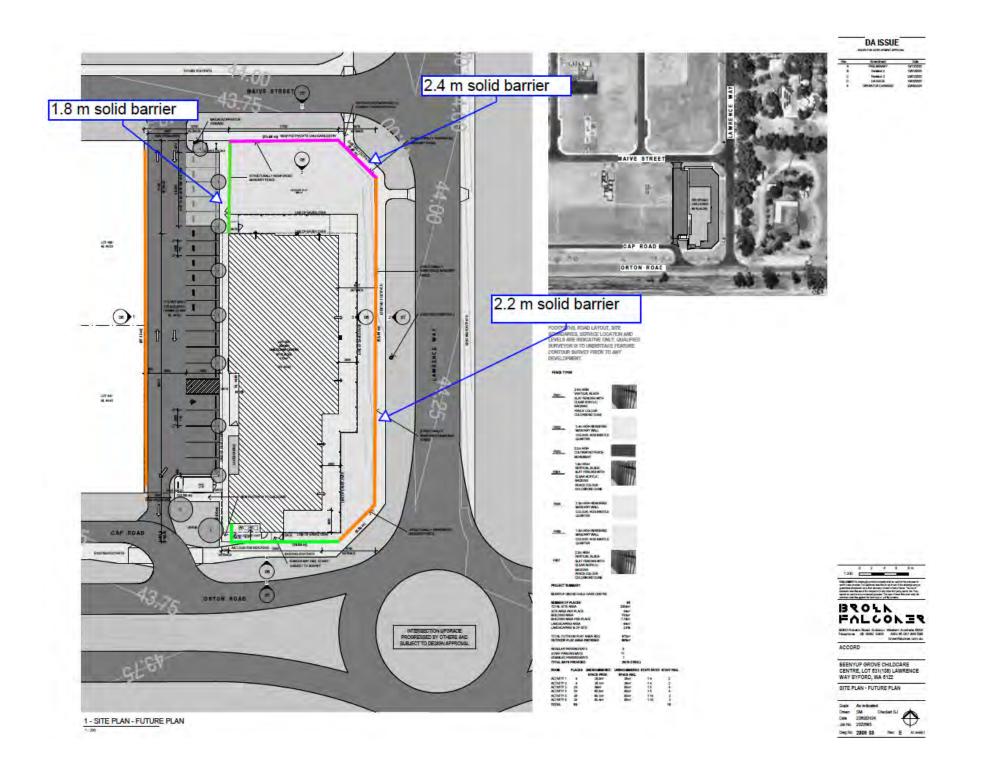
The Influencing Factor IF has been calculated for the applicable noise sensitive receptors in the current study. The percentage of industrial and commercial land within the prescribed circles centred on the noise sensitive premises, and the presence of roads with more than 6000 vehicles per day have been assessed for the properties.

Example Influencing Factor calculations are shown below. These factors are based on the land zonings established for the surrounding areas, and have been added to the baseline Assigned Levels to produce the final Assigned Levels in Section 3.2 above

Property = #1367 Orton Rd.

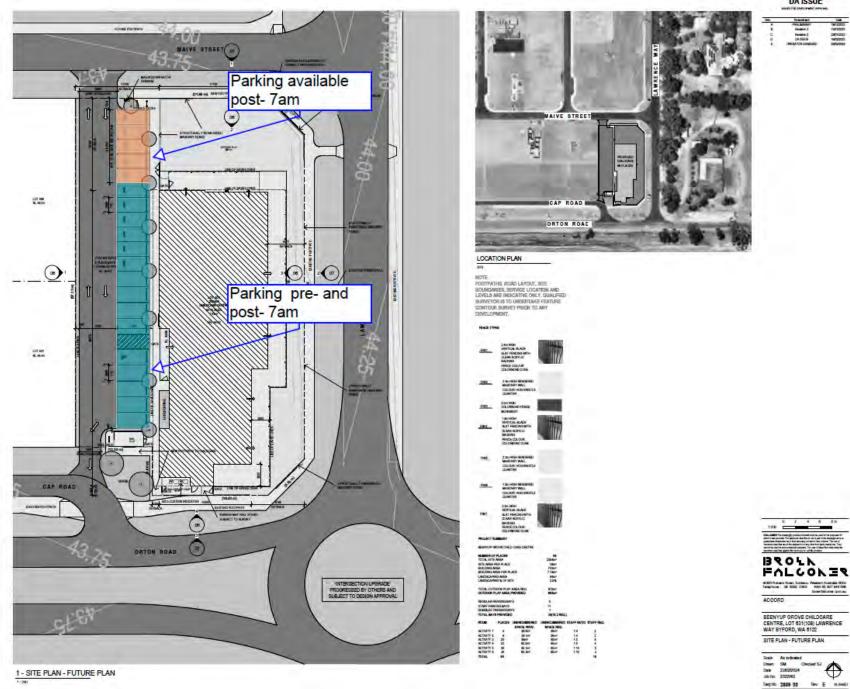
Type of Land	450m Radius	100m radius	To	tal
Industrial Land	0.0%	0.0%	0.00	dB
Commercial Land	0.0%	0.0%	0.00	dB
Transportation Factor			0	dB
TOTAL Influencing Factor			0	dB

Appendix C: Site Layout & treatments

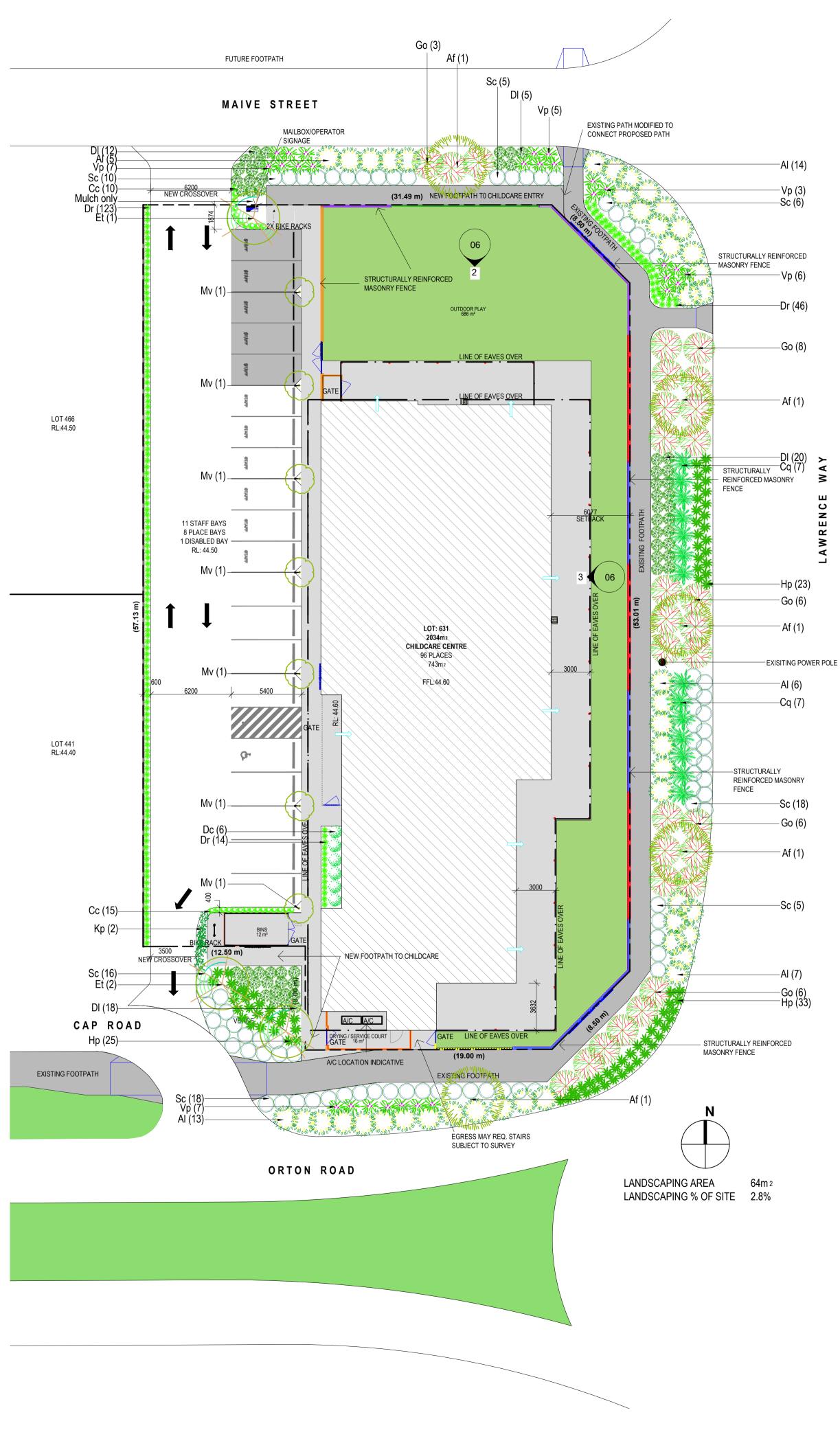


Appendix D: Carparking Availability

DA ISSUE



200 19702000 2070200 2070200 19702000 2070200 2070200



	PLANT	SCHEDULE A	ND SYMBO	L LEGEND	
Code on plan	Symbol	Botanic Name	Mature height x width	Minimum installation size	Number
TREES					
Af		Agonis flexuosa	6m x 5m	30 Litre	5
Et		Eucalyptus todtiana	6m x 4m	30 Litre	3
Μv	\odot	Melaleuca viridflora	5m x 2m	30 Litre	7
SHRUBS					
Cq	*	Calothamnus quadrifidus prostrate	60cm x 2m	13cm	14
Dc		Darwinia citriodora	1.5m x 1m	13cm	6
Vp		Verticordia plumosa	60cm x 1m	13cm	28
GRASSES					
Сс		Conostylus candicans	30cm x 50cm	14cm	25
Dr	×	Dianella revoluta 'Revelation'	50cm x 50cm	14cm	183
GROUND (COVER				
Al	AN AN AN	Acacia lasiocarpa prostrate	30cm x 2m	13cm	45
DI		Dampiera linearis 'Blue'	30cm x 1m	13cm	55
Go		Grevillea obtusifolia 'Gin Gin Jewel'	50cm x 2.5m	13cm	29
Нр	*	Hemiandra pungens	30cm x 1m	13cm	81
Кр		Kennedia prostrata	10cm x trailing to 3m	13cm	2
Sc	\bigcirc	Scaevola calliptera	40cm x 1.2m	13cm	78
TOTAL P	LANTS				561

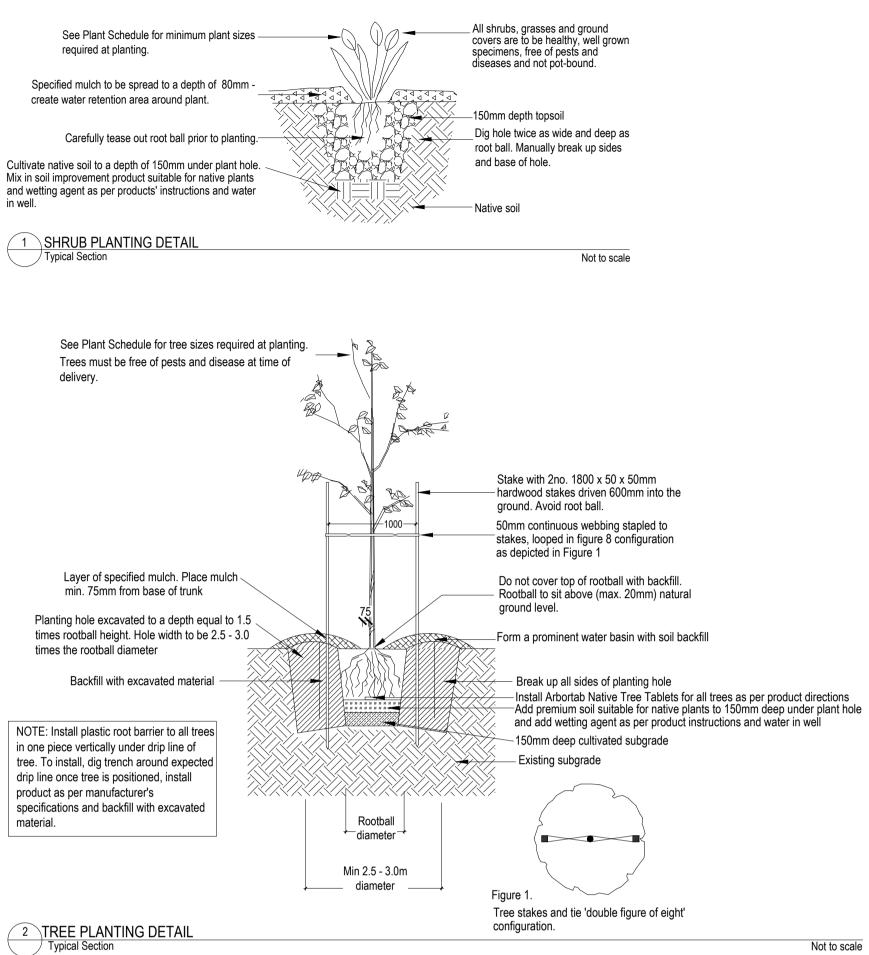




Verticordia

plumosa





Calothamnus Darwinia quadrifidus citriodora prostrate **GRASS VARIETIES**

SHRUB VARIETIES



GROUND COVER VARIETIES



Kennedia

prostrata



Scaevola calliptera

Dianella revoluta

'Revelation'



PLANTING SPECIFICATIONS

- 1. SPECIFIED PLANT SPECIES HAVE BEEN SOURCED FROM BENARA NURSERY, DOMUS NURSERY AND ELLENBY TREE FARM STOCK LISTS. SHOULD PLANT SPECIES BE UNAVAILABLE AT TIME OF PLANTING, CONTACT DESIGNER FOR SUBSTITUTIONS.
- 2. ALL PLANTING AREAS ARE TO BE PREPARED AND PLANTED IN ACCORDANCE WITH INDUSTRY BEST PRACTICE, TYPICAL DRAWINGS INCLUDED IN THIS PLAN SET AND THE INSTRUCTIONS BELOW.
- A. PREPARATION OF SOIL IN GARDEN BED AREAS:
- REMOVE ALL TRACES OF BUILDERS' MATERIAL FROM PLANTING AREAS INCLUDING RUBBLE, SAND, MORTAR AND ALL OTHER EXTRANEOUS MATERIAL.
- II. REMOVE ALL WEEDS IN GARDEN BED AREAS BY SPRAYING WEEDS WITH A STANDARD INDUSTRY HERBICIDE FOLLOWING MANUFACTURER'S SPECIFICATIONS AND LEAVE FOR RECOMMENDED TIME.
- III. REMOVE DEAD PLANT MATTER AFTER TIME SPECIFIED ON HERBICIDE PRODUCT. IV. UNDERTAKE SOIL IMPROVEMENT SUITABLE FOR NATIVE PLANTS.

B. PLANTING

- I. PLANT TREES AS SPECIFIED ON DRAWING 'TYPICAL TREE PLANTING' AND INSTALL TREE ROOT BARRIERS AROUND TREES WITHIN SITE.
- II. PLANT SHRUBS (INCLUDING GRASSES AND GROUND COVERS) AS SPECIFIED ON DRAWING 'TYPICAL SHRUB PLANTING' AND WATER IN THOROUGHLY.

C. MULCH

- AFTER PLANTING, APPLY FINE GRADE PLAY GROUND APPROVED PINE BARK WOOD CHIPS WITHIN SITE BOUNDARY AND CHUNKY PINE BARK WOOD CHIPS ON THE VERGE TO A MINIMUM DEPTH OF 80MM (MAXIMUM 100MM) TO PLANTING BEDS, KEEPING MULCH CLEAR OF PLANT STEMS. II. CHECK MULCH IS FREE OF WOOD SLIVERS AND EXTRANEOUS MATERIAL.
- III. TIDY AND GRADE MULCH AFTER APPLICATION.

IRRIGATION SPECIFICATIONS

- 1. ALL GARDEN BEDS TO BE IRRIGATED WITH SUB-MULCH DRIP SYSTEM AND AUTOMATIC
- CONTROLLER WITH RAIN SENSOR. WATER SUPPLY IS SCHEME WATER.
- IRRIGATION LAYOUT BY LANDSCAPE INSTALLER. 3

Grevillea

obtusifolia

'Gin Gin

Jewel'

Hemiandra pungens

material.



			1		
В	DEVELOPMENT APPLICAT	TON	AC	AC	29.02.2024
A	DEVELOPMENT APPLICAT	ION	AC	AC	14.03.2023
evision/issue	description		drawn	checked	date
project PROPOSED BEENYUP GROVE CHILDCARE CENTRE location LOT 631 (108) LAWRENCE WAY BYFORD			drawn AC checked AC		n CAPE PLAN
	N RETREAT	GARDEN DESIGN www.urbanretreatgardens.com.au E:amelia@urbanretreatgardens.com.au		^{date} 1, project n 222	<u> </u>
LANDSCAP	E DESIGN SERVICES	M:0438 926 313	@ A1		02 rev 02



Voting Requirements: Simple Majority

OCM152/06/24

COUNCIL RESOLUTION / Officer Recommendation

Moved Cr Duggin, seconded Cr Mazzini

That Council RESOLVES the following Responsible Authority Report Recommendation:

- 1. That the Metro Outer Develoment Assessment Panel APPROVES the development application for the proposed Child Care Premises at Lot 631, 108 Lawrence Way, Byford as contained within attachment 10 subject to the following conditions:
 - a. The development is to be carried out in compliance with plans and documentation listed below and endorsed with the Shire of Serpentine Jarrahdale stamp, except were amended by other conditions of this consent.

were amenueu b	y other conditions of this consent.
Plans and	Development Plans dated 22 February 2024
Specification	Transport Impact Statement dated March 2024
	Environmental Acoustic Assessment dated 13 March 2024
	Bushfire Management Plan dated 14 March 2024
	Bushfire Emergency Evacuation Plan dated 14 March 2024
	Landscaping Plan dated 29 February 2024

- b. Prior to the lodgement of a Building Permit, a Stormwater Management Plan must be submitted to and approved by the Shire of Serpentine Jarrahdale. The Stormwater Management Plan should be developed in accordance with Local Planning Policy 2.4: Water Sensitive Urban Design Guidelines. Once approved, stormwater must be managed in accordance with the approved plan.
- c. Prior to the lodgement of a Building Permit, detailed civil drawings showing pedestrian infrastructure are to be submitted to and approved by the Shire of Serpentine Jarrahdale. The plans shall detail pedestrian infrastructure linking to the existing footpaths. The works associated with the pedestrian infrastructure are to be completed prior to occupation of the development.
- d. The vehicle parking areas, accessways, internal roads and crossovers must:
 - i. Be designed in accordance with the relevant Australian/New Zealand Standard;
 - ii. Include a suitable number of car parking spaces dedicated to people with disability designed in accordance with the relevant Australian/New Zealand Standard;
 - iii. Be constructed, sealed, kerbed, drained, marked and thereafter maintained;
 - iv. Sign and line marking plan to be submitted to ensure traffic does not enter via Orton Road/Cap road;
 - v. Plans to be updated to show both crossovers not encroaching into neighbouring verge areas;



vi. Signage to be provided showing onsite visitor bays to be Parking (five minutes), applicable Monday to Friday between 6:30am to 9:30am and 3:00pm to 6:00pm to enable reasonable visitor car bay turnover.

Plans depicting these works are to be submitted to and approved by the Shire prior to the issue of a Building Permit. The works are to be completed prior to operation of the development, and thereafter maintained.

- e. Prior to lodgement of a Building Permit, a Lighting Plan is to be submitted to and approved by the Shire of Serpentine Jarrahdale. The Lighting Plan shall demonstrate the provision of lighting to all access ways, car parking areas, exterior entrances to all buildings and the extent to which light from all external light sources is cast. The Lighting Plan must demonstrate lighting not causing an adverse amenity impact on the surrounding area. Once approved, lighting is to be installed and maintained in accordance with the plan.
- f. Prior to lodgement of a Building Permit, plans showing per cent for art shall be submitted to and approved by the Shire of Serpentine Jarrahdale, in accordance with Local Planning Policy 1.6 Public Art. Once approved, art is to be established prior to occupation of the development.
- g. Prior to lodgement of a Building Permit, a Construction Management Plan is to be submitted to and approved by the Shire of Serpentine Jarrahdale. The Plan should address the following matters:
 - i. Management of car parking, delivery vehicles and traffic associated with the construction of the development;
 - ii. Management of dust and noise.

Once approved, the Construction Management Plan shall be adhered to at all times.

- h. Prior to the lodgement of a Building Permit, an updated Landscaping Plan shall be submitted to and approved by the Shire of Serpentine Jarrahdale. The Landscaping Plan shall detail:
 - i. Provision of vegetative landscaping within the adjoining verges of the site, and the full management of verges adjoining the site;
 - ii. Detailed planting regime and plans, identifying the number of plants, species, size of tubs;
 - iii. A schedule of planting including the how vegetation is planted, monitored for failure, and replaced where required.

Once approved, the Landscaping Plan shall be implemented prior to occupation and maintained thereafter.

- j. Prior to the issue of a Building Permit, a revised Bushfire Management Plan is to be prepared and submitted in accordance with State Planning Policy 3.7 - Planning in Bushfire Prone Areas, AS3959:2018 and the Guidelines to the satisfaction of the Shire of Serpentine Jarrahdale. Once approved the Bushfire Management Plan and Bushfire Emergency Evacuation Plan are to be adhered to at all times.
- k. Prior to occupation of the development, the measures contained within the Noise Management Plan must be implemented to mitigate noise emissions to the satisfaction of the Shire of Serpentine Jarrahdale.



- I. Prior to occupation of the development, a Waste Management Plan must be submitted to and approved by the Shire of Serpentine Jarrahdale. Once approved, development must be in accordance with the approved Waste Management Plan.
- m.Prior to occupation of the development, a Traffic and Parking Management Plan shall be submitted to and approved by the Shire of Serpentine Jarrahdale. The Traffic and Parking Management Plan shall include all recommendations of the Traffic Impact Statement and management measures for staff parking, with particular reference to prior to 7:00am. Once approved, the Traffic and Parking Management shall be adhered to at all times.
- n. All loading and unloading associated with the development must be undertaken within the subject property boundaries.
- o. Operating hours are to be restricted to a drop off time of no earlier than 6:30am and a pickup time of no later than 6:30pm Monday to Friday.
- p. The maximum number of children placed on the premises at any one time shall not exceed 96.

CARRIED UNANIMOUSLY (en bloc at 7:57pm) 5/0



PART C – SHIRE OF WAROONA

1. Declarations of Due Consideration

Any member who is not familiar with the substance of any report or other information provided for consideration at the DAP meeting must declare that fact before the meeting considers the matter.

2. Disclosure of Interests

3. Form 1 DAP Applications

3.1 Lot 702 on Deposited Plan 59305, Wagerup – Proposed Battery Energy Storage System – DAP/23/02607

4. Form 2 DAP Applications

Nil.

5. Section 31 SAT Reconsiderations

Nil.

Part C – Item 3.1 – LOT 702 ON DEPOSITED PLAN 59305, WAGERUP – PROPOSED BATTERY ENERGY STORAGE SYSTEM

	1
DAP Name:	Metro Outer DAP
Local Government Area:	Shire of Waroona
Applicant:	Alinta Cogeneration (Wagerup) Pty Ltd
Owner:	Alinta Cogeneration (Wagerup) Pty Ltd
Value of Development:	\$500 million
Responsible Authority:	Shire of Waroona
Authorising Officer:	Coordinator Regulatory & Development
	Services
LG Reference:	TP2487
DAP File No:	DAP/23/02607
Application Received Date:	25 October 2023
Report Due Date:	28 June 2024
Application Statutory Process Timeframe:	90 Days with an additional 122 days agreed.
Attachment(s):	1. Development plans
	2. Location plan
	3. Visual Tree Assessment
	4. Cash In Lieu proposal
	5. DFES advice
	6. DWER advice
	7. DPLH advice
	8. Bushfire Management Plan

Form 1 – Responsible Authority Report (Regulation 12)

Responsible Authority Recommendation

That the Metro Outer DAP resolves to:

1. **Approve** DAP Application reference DAP/23/02607 and accompanying plans in accordance with Clause 68 of Schedule 2 (Deemed Provisions) of the *Planning and Development (Local Planning Schemes) Regulations 2015*, and the Shire of Waroona Local Planning Scheme No. 7, subject to the following conditions:

Conditions

- 1. This decision constitutes planning approval only and is valid for a period of two years from the date of approval. If the subject development is not substantially commenced within the specified period, the approval shall lapse and be of no further effect.
- 2. Development shall be in accordance with the development plans contained in **Attachment 1**.

- 3. This approval relates only to the proposed "development", as indicated on the approved plans and any minor modification approved in writing by the Shire. It does not relate to any other development on this lot.
- 4. Prior to the commencement of works, a stormwater management plan shall be submitted to the specification of the Shire and approved. The approved stormwater management plan shall be implemented and maintained thereafter, to the satisfaction of the Shire.
- 5. Prior to the commencement of works, an Arboricultural Management Plan shall be submitted to the specification of the Shire and approved. The management plan shall detail measures to protect and enhance the 'Wagerup Scar Tree' 1x Eucalyptus marginata (Jarrah), identified in the Visual Tree Assessment, prepared by the arbor centre, revision 1, dated March 2024, contained in **Attachment 3**. The approved management plan shall be implemented and maintained thereafter, to the satisfaction of the Shire.
- Clearing of vegetation shall be limited to that identified in the 'Wagerup Battery Energy Storage System – CIL Contribution Proposal, dated May 2024', contained in Attachment 4. Prior to the commencement of works, the applicant shall make a Cash-In-Lieu contribution to offset the clearing, consistent with Local Planning Policy 17 – Vegetation.
- 7. Prior to the commencement of works, a revised Bushfire Management Plan shall be submitted to the specification of the Shire and approved. The approved management plan shall be implemented and maintained thereafter, to the satisfaction of the Shire.
- 8. Prior to the commencement of works, a civil works plan shall be submitted to the specification of the Shire and approved. The approved civil works plan shall be implemented and maintained thereafter, to the satisfaction of the Shire.
- 9. Prior to the commencement of works, a construction management plan shall be submitted to the specification of the Shire and approved. The approved management plan shall be implemented and maintained thereafter, to the satisfaction of the Shire.

Advice Notes

- 1. This is a development approval issued under the Shire of Waroona Local Planning Scheme No. 7 only. It is not a building permit or an approval to commence or carry out development under any other law. It is the responsibility of the applicant/owner to obtain any other necessary approvals and to commence and carry out development in accordance with all other laws.
- 2. A stormwater management plan should detail measures to detain and dispose of stormwater, prevent erosion, sedimentation, turbidity, contamination and ensure that pre and post stormwater flows remain unchanged.
- 3. The site contains Aboriginal Cultural Heritage, known as the 'Wagerup Scarred Tree' (Place 23432). Works in proximity to this tree will require reporting to the Department of Planning, Lands and Heritage for AchKnowledge lodgement. Further, this tree cannot be impacted or harmed in any way without a Section 18

approval under the Aboriginal Heritage Act 1972 and Traditional Owner's approval.

- 4. The applicant has elected to make a Cash-In-Lieu contribution as per the details contained within the 'Wagerup Battery Energy Storage System CIL Contribution Proposal, dated May 2024'. Should the scale or nature of the proposed clearing change (e.g. number or type of vegetation amended), the Shire will adjust accordingly. Further, note that costs for the Shire to undertake the works may increase over time including supplier costs for plants, soil improver, mulch, tree protection and watering.
- 5. The revised bushfire management plan should address the advice from the Department of Fire and Emergency Services, dated 17 June 2024 and any changes required by the Shire. Where acceptable solutions cannot be met, the intent of SPP 3.7 and the Bushfire Guidelines will need to be met through performance principles.
- 6. The civil works plan should include details pertaining to earthworks, retaining, access, surface treatments and other ancillary or incidental works. This should seek to ensure that neighbouring properties are not impacted by construction or ongoing operations.
- 7. A construction management plan should address the following matters:
 - a. How materials and equipment will be delivered and removed from the site;
 - b. How materials and equipment will be stored on the site;
 - c. Parking arrangements for contractors;
 - d. Construction waste disposal strategy and location of waste disposal bins;
 - e. Details of cranes, large trucks or similar equipment which may block thoroughfares during construction;
 - f. How risks of wind and/or water borne erosion and sedimentation will be mitigated during and after the works; and
 - g. Other matters likely to impact on the surrounding properties.

Details: outline of development application

Region Scheme	Peel Region Scheme
Region Scheme -	Industrial zone
Zone/Reserve	
Local Planning Scheme	Local Planning Scheme No. 7
Local Planning Scheme -	Special Industry zone
Zone/Reserve	
Structure Plan/Precinct Plan	N/A
Structure Plan/Precinct Plan	N/A
- Land Use Designation	
Use Class and	Industry – Light, Discretionary
permissibility:	
Lot Size:	5.5057ha
Existing Land Use:	Electrical transformer and power lines
State Heritage Register	No
Local Heritage	⊠ N/A
	Heritage List
	Heritage Area

Design Review	\boxtimes	N/A
		Local Design Review Panel
		State Design Review Panel
		Other
Bushfire Prone Area	Yes	
Swan River Trust Area	No	

Proposal:

Approval is sought for the development of electricity infrastructure at Alinta Energy's Cogeneration premises in Wagerup. The proposal includes development of the following:

- 300 megawatts (MW) of containerised battery unit energy storage;
- Transformers;
- High voltage cabling;
- Switch room and control room; and
- Internal access roads and ancillary equipment and infrastructure.

The development footprint occupies approximately two-thirds of the site. Plans of the proposed development are contained within **Attachment 1 – Development plans**.

Proposed Land Use	Industry - Light
Proposed Net Lettable Area	N/A
Proposed No. Storeys	N/A
Proposed No. Dwellings	N/A

Background:

The site is largely undeveloped, consisting predominantly of grassland, a remnant strand of native trees, industrial scale transformers and high voltage transmission lines that traverse the southern part of the property.

The site is located in an established industrial area, immediately east of Alcoa's Wagerup refinery and Alinta Energy's gas power station. A range of electricity infrastructure exists in the locality including high voltage power transmission lines, substations and transformers. The property is located seven kilometres south of Waroona and is set in an industrial/rural landscape (refer to **Attachment 2 – Location plan**).

The proposal seeks to develop a Battery Energy Storage System (BESS) with capacity to store 300 MW of power and ancillary infrastructure. This will connect to the South West Interconnected System.

Legislation and Policy:

Legislation

Planning and Development Act 2005 and Planning and Development (Local Planning Schemes) Regulations 2015

The development is not exempt from the requirement to obtain development approval.

Peel Region Scheme

The site is zoned 'Industrial'. The zone objective is:

"to provide for manufacturing industry, the storage and distribution of goods and associated uses".

The development is consistent with the zone objective and will be complimentary to the industrial precinct. It will not prejudice the effective use or future development of the area. Development approval under the Scheme is not required.

Shire of Waroona Local Planning Strategy and Local Planning Scheme No. 7

The Strategy identifies this property and the surrounding area for general industrial purposes, being within the Industrial Precinct. The objective for this area is:

"To provide areas for general industry of regional and local significance and to protect those industries from encroaching land uses and developments that could jeopardise their establishment and operation."

The Scheme has the land zoned as 'Special Industry' and does not contain any zone objectives or provisions. The zoning and development table uses an unorthodox system for identifying land use permissibility and refers to a note which states:

*Uses restricted to company operations of industry identified on Scheme Maps."

The Scheme Maps do not identify or nominate any uses or operations. It is considered that an appropriate methodology to determine land use permissibility is to apply a pragmatic approach by considering the context of the area (existing/established use and development), the intent and future development aspirations and whether the proposal will be prejudicial or complimentary.

The proposed development is best defined as 'Industry – Light' under the Scheme, which states:

"Means premises used for an industry where impacts on the amenity of the area in which the premises is located can be mitigated, avoided or managed;"

The development of electricity infrastructure (light industry) in an industrial area (special industry zone) is in keeping with the aforementioned considerations. It is considered that the proposed development is a discretionary use and that discretion should be exercised in approving the application.

State Government Policies

State Planning Policy 2.1 – Harvey Coastal Plain Catchment and Draft State Planning Policy 2.9 – Planning for Water

The site is located within the Peel Harvey coastal plain catchment, which is a water sensitive area. Some infrastructure, such as batteries, have the potential to contaminate the surface or groundwater if a fire event were to occur and the battery container was compromised – electrolyte and chemical discharge and molten material making contact with the ground and infiltration.

A condition is recommended, requiring a detailed stormwater management plan and civil design plans. This information will ensure that the design mitigates the potential for contamination, erosion, sedimentation and turbidity – addressing the intent, objectives and provisions of the policy.

State Planning Policy 3.7 – Planning in bushfire prone areas

Approximately 50 per cent of the property is mapped as bush fire prone. The proposed development is considered a 'high risk' land use due to the storage of large amounts of energy in the batteries, which have an elevated risk of combustion and can intensify a bush fire.

A Bushfire Management Plan (BMP) was received on 16 May 2024 and subsequent Department of Fire and Emergency Services (DFES) advice received on 17 June 2024. The delay in the provision of the BMP and subsequent advice was the primary reason for the extension of time past the 90 days determination period.

A condition is recommended requiring a revised BMP, based on the submission made by DFES. This will address the intent, objectives and provisions of the policy.

Structure Plans/Activity Centre Plans

N/A

Local Policies

Local Planning Policy 17 – Vegetation

This policy applies to proposals where the clearing or disturbance of vegetation will occur. The policy encourages development to respond to the protection of existing vegetation, enhancing its area, condition and value through a net gain outcome.

The development responds in part to protecting vegetation by retaining a remnant Eucalyptus marginata (Jarrah tree) – known as the Wagerup Scarred Tree (Aboriginal Cultural Heritage Place 23432). Recommendations by an arborist have been made to retain and enhance this tree, which is contained within **Attachment 3 – Visual Tree Assessment**. The remainder of the vegetation contained on-site, including six Jarrahs and ten Marris, are proposed to be cleared. The applicant has advised that they do not wish to plant vegetation on-site to achieve a net gain and have proposed that the Shire undertake replanting in-lieu off-site. A Cash-In-Lieu (CIL) contribution has been proposed, consistent with the Policy (**Attachment 4 – CIL proposal**). This is a suitable proposal and a condition is recommended to address this CIL contribution.

Consultation:

Public Consultation

The proposal was not advertised to the public as it is consistent with the local planning framework, is considered to have no impact on neighbours and is consistent with the existing and future development aspirations of the area.

Referrals/consultation with Government/Service Agencies

Department of Fire and Emergency Services

The Department has advised that the development application is not compliant with SPP 3.7 *Planning in bushfire prone areas* and the *Guidelines for planning in bushfire prone areas* (Guidelines) (**Attachment 5 – DFES advice**). This includes not meeting the intent of Element 1: Location and Element 3: Vehicle Access. Discretion should be exercised, given:

- There are opportunities for the proposal to be modified to achieve a BAL-29 or the risk could be appropriately managed, consistent with the Performance Principle of Element 1 (e.g. increased boundary setbacks, incorporation of Asset Protection Zones, shielding, strategic water tanks, hydrants) in a revised BMP.
- The site enjoys access to existing constructed roads, access tracks and a number of fire breaks which allow emergency services personnel to attend the site. Further, a perimeter or strategic firebreak/access track and internal roads can be identified in a revised BMP.

A condition is recommended, requiring a revised BMP to be submitted. The Shire will ensure that the management plan addresses the intent, performance principles or acceptable solutions of the policy and Guidelines and will give due regard to comments raised by DFES and any advice from the local fire brigade.

Department of Water and Environmental Regulation

The Department provided advice on regulatory requirements under the *Environmental Protection Act 1986* (Attachment 6 – DWER advice). This did not raise any objections or concerns.

Department of Planning, Lands and Heritage

The Department provided advice in relation to the Wagerup Scarred Tree on the property (**Attachment 7 – DPLH advice**). Conditions are recommended that address the protection of this tree and an advice note provides further clarification.

Design Review Panel Advice

N/A

Swan Valley Planning

N/A

Other Advice

The proposal was referred to the South West Aboriginal Land and Sea Council and Waroona Aboriginal and Torress Strait Islander Corporation due to the development occurring in close proximity to the Wagerup Scarred Tree (Aboriginal Cultural Heritage Place 23432), on the same property. No responses were received.

Planning Assessment:

Water quality and quantity

The site is located within the Peel Harvey water catchment, which contributes surface and sub-surface water to the Peel-Harvey Estuary. Measures should be taken to mitigate risk of pollution, turbidity, erosion, and nutrients, consistent with SPP 2.1 *Harvey Coastal Plain Catchment* and draft SPP 2.9 *Planning for Water*.

A BESS is relatively low risk, however there are components of the development that may impact water quality or quantity of the catchment or adjoining landowners. The site's sloping nature, drainage characteristics and nearby water bodies, soil profile and elevated fire risk, in conjunction with battery components, all have the potential to cause issue. These matters can be addressed through the imposition of the recommended condition for a detailed stormwater management plan.

Protection of vegetation

LPP 17 – *Vegetation*, encourages the protection and enhancement of vegetation that contributes to the amenity, character, sense of place and environmental attributes of the local government. The site contains remnant vegetation worthy of retention and protection, being a Eucalyptus marginata (Jarrah tree), also known as the Wagerup Scarred Tree (Aboriginal Cultural Heritage Place 23432). Ideally, the remaining vegetation on the property, consisting of mature Marri and Jarrah, would be retained. However, given the context of their location and composition, being isolated with no nesting hollows and relatively low number (sixteen in total), it is considered that their environmental and cultural significance is minimal.

The applicant has committed to protecting and enhancing the Scarred Tree and make a Cash-In-Lieu (CIL) contribution for the Shire to undertake replanting works elsewhere to achieve a net gain. The proposal is consistent with the objectives and provisions of the policy. Conditions have been recommended to address the protection and enhancement of the tree and achieve a net gain in vegetation through a CIL contribution.

Bushfire

Approximately three hectares of the site is mapped as bushfire prone by DFES mapping, representing over half of the property. The bushfire threat consists of forest vegetation to the north and west of the site on adjoining properties and the unmanaged grassland on-site also represents a fire risk. A BESS is considered a high-risk development, given the large energy storage and the potential for the development to cause or intensify a bushfire.

A Bushfire Management Plan (BMP) was prepared and is contained within **Attachment 8 – BMP**. SPP 3.7 *Planning in Bushfire Prone Areas* and the Bushfire Guidelines apply to the proposal. DFES advice includes that the development is not compliant as it does not meet the intent of Element 1 Location and Element 3: Vehicular access. Further, comments seek clarification on how the proposed development will address a number of requirements contained within the Guidelines.

The comments made by DFES include:

- Vegetation classification low threat classification outside the lot boundaries not demonstrated;
- Risk Management Plan not provided;
- Location separation distance and radiant heat level exposure not demonstrated;
- Siting and design Asset Protection Zone outside the property boundaries;
- Vehicle access legal access, driveway loop access and internal access, not demonstrated;
- Water guaranteed and adequate water supply not demonstrated; and
- DFES Built Environment Branch various design elements not demonstrated.

Whilst there are a number of acceptable solutions which have not yet been demonstrated, as per the Guidelines, it is considered that the proposal broadly meets the intent and performance principles of the Guidelines. Detailed site planning of the BESS has not yet been completed and may be subject to some change. The outstanding matters can be addressed once the applicant progresses the detailed design of the BESS and through a revised BMP. There is sufficient information at this stage to provide a level of confidence that the proposal is suitable for approval.

General design

Given the sloping nature of the property, soil profile and scale and nature of the proposed development, substantial site works will need to be undertaken to accommodate the development. This will likely require cut and fill, retaining and the importation of various surface treatments. Given this, there is the potential for the site to cause a nuisance or impact to surrounding properties if not constructed or designed correctly.

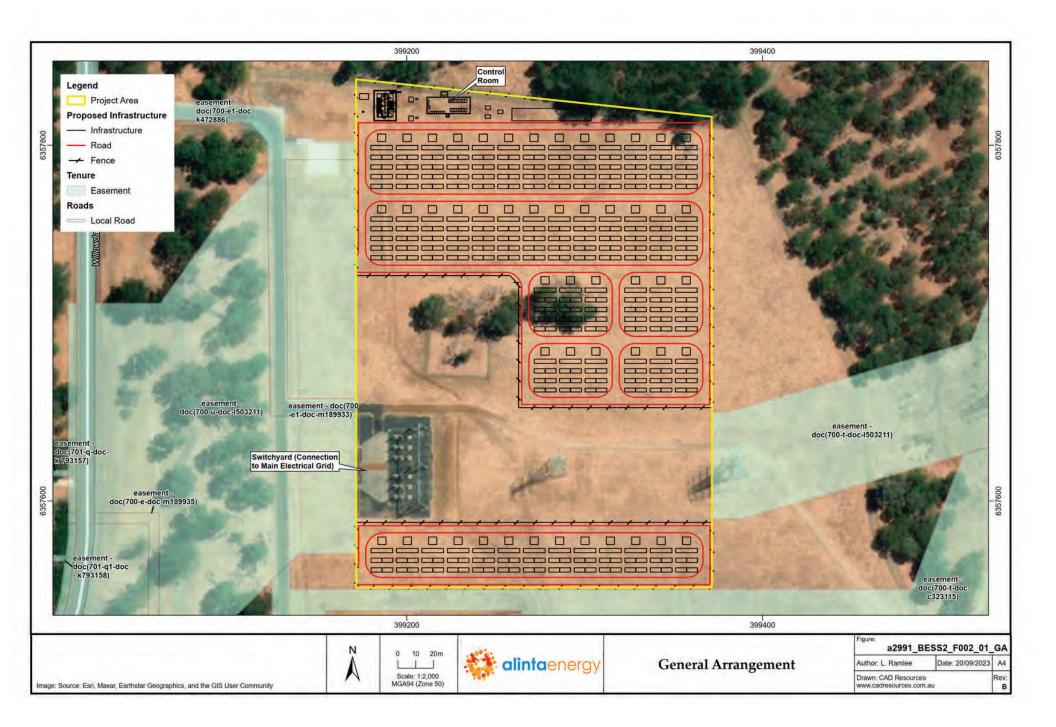
Conditions are recommended, requiring a construction management plan and a civil works plan. The intent of these conditions is to ensure that the construction works and ongoing operations do not contribute to immediate or ongoing issues with neighbouring properties.

Conclusion:

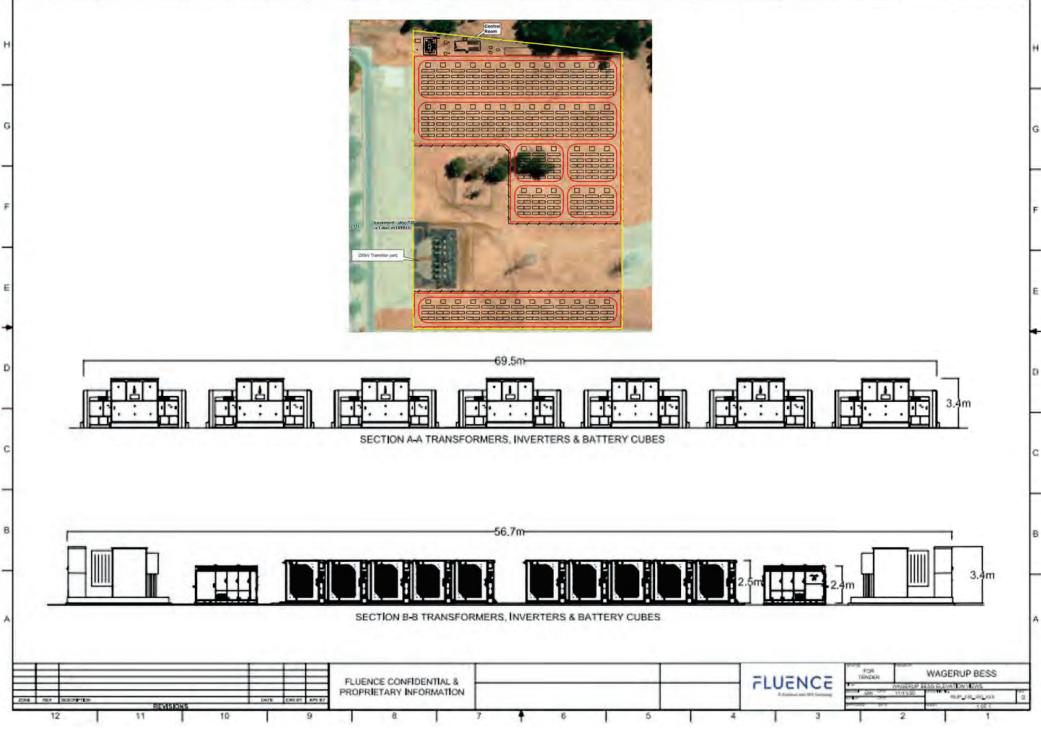
The site is largely undeveloped, consisting of grassland, a remnant strand of native trees, industrial transformers and high voltage transmission lines. It is located in an established industrial area, immediately east of Alcoa's Wagerup refinery and Alinta Energy's gas power station. A range of electricity infrastructure exists in the locality, including high voltage power transmission lines, substations and transformers.

The proposal seeks to develop a Battery Energy Storage System (BESS) with capacity for storage of 300MW of power and ancillary infrastructure, which will connect to the South West Interconnected System (SWIS). The proposal is consistent with, and complimentary to, the existing and future development aspirations of the area. Its purpose, to capture and store excess renewable energy produced during peak periods, and release during high demand, back into the SWIS, will assist in the transition to a greater proportion of renewable energy usage within the grid and stability.

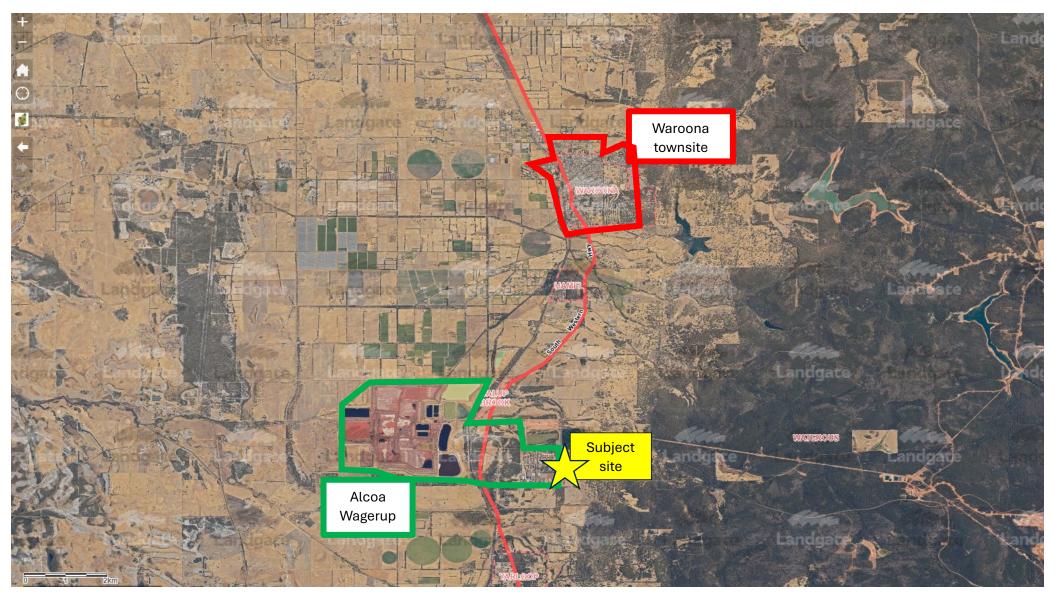
The proposal is consistent with the intent, objectives and provisions of state and local planning frameworks and is suitable for conditional approval.







Attachment 2 – Location plan







Revision 1 – Alinta's Proposed Battery Energy Storage System (BESS) Development Site, Wagerup - Visual Tree Assessment (VTA) – March 2024

Visual Tree Assessment (VTA) 1x Eucalyptus marginata (Jarrah) – Wagerup Scar Tree



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Reference number: Q007987

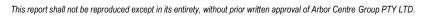
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Prepared for: Alinta Energy Rev 1 – Wagerup Scar Tree (Alinta's Proposed Battery Energy Storage System (BESS) Development Site) - Visual Tree Assessment (VTA) – March 2024



1. Introduction

1.1 Purpose of this Preliminary VTA Report

To inspect the subject tree as specified by Alinta Energy to provide comment on current health and structural status of the tree for ongoing management requirements and; identify remedial considerations required for the retention of the tree at Alinta's Proposed Battery Energy Storage System (BESS) Development Site (circled in Figure 1) in lieu of proposed works.



Figure 1. Tree of assessment outlined in red – image source <u>www.Nearmap.com</u> - image date 31st January 2024

1.2 Arboricultural Inspection

Arbor Centre undertook an Arboricultural assessment of the identified tree on the 21st of March 2024. The assessment was a visual inspection undertaken from ground level and did not incorporate any form of below ground or aerial inspection of the trees.

1.3 Limitations of this Report

This report provides interpretation of the trees current status; and affords high level guidance on how best to manage the tree over the near and longer term. Ongoing specialist Arboricultural inputs will be required in implementing these recommendations; and; in refining tree and tree risk management requirements

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Rev 1 – Wagerup Scar Tree (Alinta's Proposed Battery Energy Storage System (BESS) Development Site) - Visual Tree Assessment (VTA) – March 2024

over time, based on tree responses. The information contained within this report is not intended, or suitable to be used as a Final 'Arboricultural Management Report' for the subject tree.

Further to the above, this assessment and report does not attempt to predict or quantify potential future tree failures, the partial or complete failure of trees and/or tree parts is a natural part of any environment. Tree failures may be influenced by a wide range of factors including (but not limited to) tree age and condition, quality of previous pruning works; abrupt changes to the local growing environment, prior root zone incursion/impacts and high winds or other extreme climatic events etc.

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2. Executive Summary



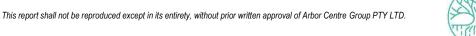
Refer Appendix A for further detail regarding full VTA Results.

Figure 2 – Subject tree at the time of inspection (21st March 2024) Image looking Northwest.

The subject tree – *Eucalyptus marginata* (Jarrah) was assessed on the 21st of March 2024. The subject tree was assessed in light of development works proposed and concerns regarding its protection during these works. This tree is considered able to be retained, given that the remedial measures/successional planning outlined within this report are followed. The tree in its current circumstance could be retained within the proposed development and should be investigated further for any future development proposed for this site - refer figures 2, 3 & 4 for detail on the current site circumstance.



Figure 3 – Subject tree at the time of inspection (21st March 2024) Image looking East. Prepared for: Alinta Energy Rev 1 – Wagerup Scar Tree (Alinta's Proposed Battery Energy Storage System (BESS) Development Site) - Visual Tree Assessment (VTA) – March 2024



The canopy displays good health given the current constraints. The subject tree displays good new seasonal growth (includes regeneration – however, the canopy is made up of epicormic regrowth), good leaf colouration and good leaf size at time of assessment. The tree has a useful life expectancy of 5 - 10 years from an amenity point of view, however it should be noted that this tree in its current circumstance possess high habitat value (40+ years) and should be considered further with the future development of a successional planting plan around this tree.



Figure 4 – Subject tree at the time of inspection (21st March 2024) Image looking North.

The subject tree has a poor structural form, this is due to several structural issues that were observed including; Significant fire damage occurred during the 2016 bushfire that came through the site (the tree immediately displayed signs of decline and lost large portions of its canopy); The extensive fire damage lead to the development of hollows (up to 300mm in diameter) within the canopy; some internal decay was present however this appears to primarily be located in the upper portion of the main stem; In response to the fire damage previously mentioned the tree generated a significant amount of epicormic regrowth from the lower portion of the main stem, these have generated poor points of attachment and in some cases have failed from the tree (refer figure 3 for an example); Previous stem failures ranging up to 400mm in diameter; Deadwood ranging to 400mm in diameter. These issues are generally considered manageable within the scope of a successional tree management plan and consideration should be given to the development of such a plan that includes the cultural heritage, amenity influence, habitat value and natural heritage.

Decay was present in the main stem (approximately 3m from ground level) and also in the basal region where fire damage had caused significant damage. However, the habitat potential for this tree will need to be considered in light of any proposed works.

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Inspection of the root flare revealed no apparent soil cracks, root plate subsidence, heaving, or noticeable movement at ground level (which indicates that this tree has established well into its surrounding environment). The overall basal flare reaches a diameter of 2100mm and displays good arterial root growth (visual inspection only), some surface roots were present at the time of inspection and appeared to have major fire damage. Roots are opportunistic ever-changing organisms and should be considered when designing new developments in association with existing trees. The current exclusion zone that has been developed for this tree appears adequate at this time to minimise root loss from occurring. Root systems develop utilising existing moisture gradients in the soil which are formed through density differences between particles where condensation is held for extended periods of time (i.e. the back side of retaining walls, along service alignments, through disturbed soils, etc.).

The subject tree lends itself to future development of this site as the existing constraints and current circumstance (described above) – refer Appendix A for details) have created a unique opportunity that if developed in collaboration with a suitably qualified arboricultural consultant with experience in tree preservation of significant, historic, veteran trees the tree can be managed and maintained through the development process with limited loss to amenity (refer Appendix B for further details on the tree retention process).

The Nominal Tree Protection Zone (TPZ) calculated for this tree is 15 metres using the calculation of 12 times the Diameter at Breast Height (DBH) (this calculation is based on the Australian Standards AS4970 – 2009 '*Protection of Trees on Development Sites'*). This indicates if works are undertaken beyond the nominal tree protection zone, then the tree could be retained with minimal arboricultural mitigation/remediation required. However, it should be noted that through the development of a 'work specific' TPZ (customised to the site-specific requirements - i.e. design, service alignments, construction footprint, etc.) remedial measures can be implemented to offset and/or address proposed encroachment/damages.

Note 1: the identified Nominal TPZ is the minimum root zone which requires protection during construction, development or in performing of any activities that may encroach into the TPZ which may cause harm or injure the tree and its parts (Measured in meters, as a radius from centre of trunk).

Note 2: the 'work specific' Tree Protection Zone (TPZ) is a modified TPZ due to site specific circumstances (i.e., pad alignments, rootzone investigation works, surrounding construction, etc.) which differs from the 'nominal' TPZ. The 'nominal' TPZ is a starting point for considerations (refer point 3 for further detail), however, through investigative works an 'work specific' TPZ is produced to be as site specific as possible.

Prepared for: Alinta Energy



This will be subject to the design that is proposed for this location and will require ongoing arboricultural inputs to ensure the subject tree is retained with the appropriate level of care that would be required for its retention. Moving forward with the design of Alinta's Proposed Battery Energy Storage System (BESS) Development Site, consideration will need to be given to the following (but not limited to) - refer point 3. for further detail;

- Proposed soil level changes
- Proposed and existing service alignments
- Proposed finishes (i.e. paving, decking, etc.)
- Proposed building alignments
- Current canopy dimensions/circumstance
- Current below ground dimensions/circumstances
- Alternative design methodologies (i.e. incorporating permeable paving, WSUD technologies, tree sensitive installation methods, etc.)
- Proactive and reactive remediation works (i.e. Arboricultural Management Plan, Monitoring, Canopy Management, Rootzone Management, etc.)
- Demolition/decommissioning requirements
- Tree Protection Zones and usage/restrictions
- Hard and soft landscaping
- Placement of machinery
- Excavation minimisation measures

At the time of inspection there appeared to be no current major <u>visual</u>* impacts that were noted to the adjacent properties. ***Note**: this inspection was undertaken from ground level only, from the outside of the adjacent properties, this inspection did not incorporate any below ground investigation works, aerial investigation works or internal building investigation works.

Further to the subject tree it was identified whilst onsite that there is an array of reasonable to good specimens on the site (adjacent the Wagerup Scar Tree) which should be further considered for retention, in redeveloping this site - refer Figures 5 & 6 for examples of these trees and Point 3 for high level tree retention considerations.



Figure 5– Additional trees at the time of inspection (21st March 2024) Image looking North.

Figure 6 – Additional trees at the time of inspection (21st March 2024) Image looking East.

The subject tree assessed has been identified as capable of being retained provided the issues identified within this report are acknowledged &/or addressed within a long-term tree management plan (refer Point 5. *Recommendations* for further detail).

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2.1 Wagerup Scar Tree – Historical Aerial Imagery



Figure 7 – Aerial Imagery (Pre-Bushfire) – image source www.Nearmap.com - image date 6th of February 2013



Figure 8 – Aerial Imagery (Post Bushfire) – image source www.Nearmap.com - image date 13th of January 2016

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Figure 9 – Aerial Imagery (2 years Post Bushfire) – image source www.Nearmap.com - image date 22nd of February 2018



Figure 10 – Aerial Imagery (8 years Post Bushfire)- image source www.Nearmap.com - image date 31st of January 2024

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3. Preliminary Tree Preservation Considerations

3.1 Introduction

Root zone impacts (and associated root loss) can negatively affect tree health (and stability) many years after the event, it is essential for tree success that tree protection and remedial measures are factored into design refinements and works methodologies and appropriately implemented and that specific remedial measures are actioned and appropriately supervised, to ensure the potential longevity of retained tree can be realised.

Below is an outline of the matters that will need to be addressed as part of developing and implementing a Tree Retention Plan for the specimen proposed to be retained into the Alinta's Proposed Battery Energy Storage System (BESS) Development Site.

3.2 Tree Preservation Considerations

 Should re-development of the site/are be desired, refinement and further specialist Arboricultural input will be required in determining forward works/demolition and construction methodologies (and specifications) prior to finalising and implementing a design; to ensure minimal tree root and canopy impact can be designed into the project.

Note: A collaborative review of proposed designs and works methodologies with a suitably qualified arboricultural company with experience in tree preservation of significant, historic, veteran trees and other relevant parties is recommended to develop and implement modifications and refinements where required to reach a successful tree retention outcome for the project – refer Appendix C & D for preliminary development considerations.

 Avoiding disturbance/ incursion into the Tree Protection Zone (TPZ) projections and that where encroachment into the TPZ area is unavoidable, a suitably qualified arboricultural company with experience in tree preservation of significant, historic, veteran trees to provide inputs into appropriate works methodologies and/or remedial measures prior to any incursion occurring. Further, there may be a requirement for a suitably qualified arboricultural company with experience in tree preservation of significant, historic, veteran trees to be present during the proposed works to assess tree impacts and prescribe and/or undertake necessary remedial works.

- The implementation of tree specific Tree Protection Zones (TPZ's) and the erection of approved protective fencing and identification signage to be installed prior to the commencement of the works period at the delineation of the TPZ(s) (refer Appendix B Overview of Australian Standards AS 4373 & AS 4970 for a high-level overview of the tree retention process).
- Any below ground services and infrastructure that are proposed to travel through/encroach within the identified TPZ(s) i.e., crossovers, below ground infrastructure, pipe works, footings, water, power, gas, telecommunications, irrigation etc.., should be relocated/diverted to outside of the TPZ projection(s). This should be undertaken in conjunction with a suitably qualified arboricultural company with experience in tree preservation of significant, historic, veteran trees to identify where new service alignments are best located to minimise impact on the subject trees - including methodologies associated with their installation.
- Where diversion of proposed below ground services and/or other works within the TPZ(s) is not achievable, Arboricultural input(s)/approval will be required prior to works occurring to; quantify potential root loss; limit unnecessary root or canopy damage/impact and/or provide remedial measures necessary.
- Where scheduled works cannot reasonably be diverted outside the TPZ(s), Arboricultural supervision will be required to quantify potential root loss, limit unnecessary root damage/impact, and/or provide possible remedial measures necessary to offset potential root loss. Works include but are not limited to;
 - o Clearing/Demolition and site stripping
 - Civils works
 - Below ground service installation/upgrades
 - Any soil level changes (cut and/or fill)
 - Any Construction
 - Hard and Soft Landscaping (including irrigation installation).
- Selective pruning of the tree's canopies can help improve structural form and site safety and crown lifting for construction, vehicular or machinery access may be required (to varying degrees)

 refer Appendix B Overview of Australian Standards AS4373 for further detail.

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- Pruning of roots (subject to a suitably qualified arboricultural company with experience in tree preservation of significant, historic, veteran trees approval) where proposed works may encroach into the TPZ area(s), will need to be undertaken by, or under the supervision of a suitably qualified arboricultural company with experience in tree preservation of significant, historic, veteran trees.
- Supplementary watering of the tree subject to the amount of potential root loss sustained & seasonal variation* may be required.
 *Note: Timing of works around the tree could have significant implications regarding irrigation rates and frequencies and the associated level of maintenance required i.e., active growing periods within warmer months as opposed to slower growth periods in winter.
- Potential remedial measures for both canopy and root zone (i.e., soil wetting agents and liquid organic soil drenching) being subject to Arboricultural approval.
- Installation of surface protection and/or trunk and branch protective measures may need to be considered for the site (where identified by a suitably qualified arboricultural company with experience in tree preservation of significant, historic, veteran trees and if required) to enable vehicle/machinery movement within the TPZ(s).
- The Tree Protection Zone(s) are to be retained for the duration of the construction period and are
 not to be modified without prior approval from a suitably qualified arboricultural company with
 experience in tree preservation of significant, historic, veteran trees. Contractors are to be made
 aware of the Tree Protection Zone within the site's works area, and that no works are to occur
 within this area without prior approval from a suitably qualified arboricultural company with
 experience in tree preservation of significant, historic, veteran trees.
- Restricted activities within the TPZ(s) are to be specified in construction documentation & drawings and subject to prior approval by a suitably qualified arboricultural company with experience in tree preservation of significant, historic, veteran trees through the development and construction phases as identified. The construction TPZ(s) are to be treated as a "No Go" zones and provision for many construction activities will need to be facilitated elsewhere on site.
 For example: -

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- Traversing and/or Parking of plant machinery or vehicles (where root protection measures have not been implemented);
- Storage for construction or deleterious materials (where root protection measures have not been implemented);
- Locations for site offices or toilets (where root protection measures have not been implemented);
- Mechanical removal of vegetation;
- Unprotected vehicle refuelling;
- Preparation of chemicals and concrete washout;
- Areas to dump construction and general waste;
- Wash down or cleaning of any kind;
- Excavation and dewatering activities; and
- Or any other activity that may harm or injure the tree above or below ground.
- Offset Planting should be considered where tree retention cannot be suitably managed. All stock which is to offset any loss must conform with the Australian Standards (AS 2303:2015 '*Tree stock for landscape use*') and approved soil remediation works, and planting techniques are to be utilised. Associated destructive testing should be undertaken by a suitably qualified arboricultural company with experience in implementation of AS 2303 and its processes for any stock which is purchased for the project (refer Appendix B Overview of AS 2303 for further detail regarding tree stock).
- Regular Arboricultural inspections &/or supervision during the construction/works period will be critical in ensuring tree welfare is preserved.

References: AS 4373 2007, AS 4970 2009, AS 2303 2015, Harris et. Al 2004

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4. Conclusions

The Subject tree is capable of being retained; however, this is contingent on the Recommendations identified within this report being appropriately implemented in a timely manner and; to the required standards as identified by a suitably qualified arboricultural company with experience in tree preservation of significant, historic, veteran trees.

The tree assessed for this report currently provides valued cultural (tree has been identified as a Scar Tree), habitat (hollows, avian activity and future successional planting), and aesthetic (good health, and high useful life expectancy (habitat)) benefits for Alinta's Proposed Battery Energy Storage System (BESS) Development Site, and such benefits can be carried over and incorporated into the proposed future development if recommended measures are taken. The benefits of these services can be expected to increase as urbanisation of the local area continues.

The Subject tree appears to be to have previously been extensively damage by bushfire (2016) and will require ongoing management works to develop the successional planning of this tree, the health of the tree is in a good condition and only requires minor maintenance works (i.e. collection of seed, thinning of epicormic regrowth, etc).

Implementation of an Arboricultural Management Plan/Successional Planting Plan for the subject tree (and possibly the additional trees around the site), which should include (but is not limited to):

- Canopy pruning/management works (refer Specific Works Below);
 - Undertaking collection of seed and undertake propagation of collected material to keep the genetic markers present within the site.
 - Undertake formative pruning to the epicormic regrowth to re-establish a form work for short term canopy growth; and
 - During these pruning works it is recommended to undertake Deadwooding (≥50mm only)
 noting that some of this deadwood could be utilised for habitat in the area.
- Undertake laboratory testing to identify soil and water issues that may be affecting the trees current (and future) health;
- Undertake the development of a monitoring schedule to assist in the trees recovery/implementation of the successional plan.

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With mature trees becoming increasingly rare in the urban environment (largely due to infill developments including road and pedestrian way upgrades, street refurbishments, etc.), and the many decades it takes to replace lost canopy, it would be reasonable for high priority being given to its retention within the proposed design (where possible).

Specialist corrective and remedial pruning undertaken over several years can alleviate defects within the canopy and extend the useful life expectancy of the tree for the foreseeable future. During canopy pruning works, aerial inspections can also be undertaken throughout the canopy to identify (and address minor) structural issues not visible from the ground level.

Achieving the successful long-term retention of the tree will require specialist and timely Arboricultural input into the development of an appropriate long term Arboricultural Management Plan (including the development and implementation of a 'tree specific' canopy pruning plan).

The tree should have ongoing assessments to verify long-term status in terms of health and safety.

The management of risk is underpinned by the standards of ongoing maintenance afforded the tree. It is imperative that only suitably qualified and experienced in tree preservation are engaged in monitoring, maintaining and managing the tree into the future.

Any works undertaken are to be approved by a suitably qualified Arboricultural Consultant with experience in tree preservation of significant, historic, veteran trees prior to their commencement and; undertaken by a suitably qualified arboricultural company with experience in tree preservation of significant, historic, veteran trees nominated by the client.

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5. Recommendations

Tree Is To Be Retained And The Following Recommendations Implemented By a Suitably Qualified Arboricultural Company with experience in tree preservation of significant, historic, veteran trees:-

5.1 Short Term (Immediate Actions)

- That an Arboricultural Management Plan (AMP) be developed and implemented for the tree to addresses the risk management, Succession Plans, findings from the analytical results (Soil Analysis, Leaf Tissue Analysis, and Water Analysis) and long-term management options, while at the same time as maximising tree amenity and longevity.
- That Corrective/Remedial Canopy Pruning be undertaken to address structural defects that were noted in the inspection;
- Undertake laboratory testing to identify soil, leaf, and water issues that may be affecting the trees current health; and

5.2 Medium Term (~12 months)

- Undertake ongoing monitoring over the next 12 months (recommend Quarterly Inspections and Inspection Post Severe Weather Events) to ensure further remedial measures can be implemented in a timely manner
- Further discussion regarding the additional trees within the Alinta's Proposed Battery Energy Storage System (BESS) Development Site that could be retained into the proposed development.

5.3 Longer Term (~3 – 5 years)

- That reinspection of the tree be undertaken post pruning in 3 5 years time (and/or following severe weather events) by the Consultant to assess and make further recommendations (remedial or otherwise) where required.
- Based on tree response to the short-term corrective/remedial pruning, commence specialist remedial pruning to alleviate remaining defects from within the canopy and establish framework to enable future maintenance.
- Review undertaken of management plan every 5 7 years.

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6. References & Reading

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Le Roux, D. S Et Al 2014, 'The Future of Large Old Trees in Urban Landscapes' The Fenner School of Environment and Society, the Australian National University, Canberra, Australia

Lonsdale, D., 1999, *Principles of Hazard Tree Assessment and Management,* The Stationary Office, Norwich, UK

Mattheck, C.& Breloer, H.,1999, *The Body Language of Trees - A handbook for failure analysis*, The Stationary Office, Norwich, UK

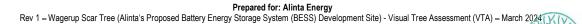
NearMap Aerial Imagery, via http://www.nearmap.com/photomaps/ (accessed March 2024)

Powell, R., 1990, *Leaf and Branch – Trees & Tall Shrubs of Perth*, Department of Conservation & Land Management, Australia

Standards Australia, 2007, *Australian Standard AS4373: Pruning of amenity trees*, Standards Australia, Sydney, Australia

Standards Australia, 2009, *Australian Standard AS4970: Protection of Trees on Development Sites*, Standards Australia, Sydney, Australia

Standards Australia, 2015, Australian Standards AS2303: Tree Stock for Landscape Use, Standards Australia, Sydney, Australia





Arbor Centre - Visual Tree Assessment (VTA)

		Arbor Centre - Visual Tree Asses	sment (VTA)	
Tree Identification Number - Genus Species - Common Name - Tree Origins - Site Address - Suburb - Postcode - Name of Assessor Date - Time - Height Estimate ~	AC0001 <i>Eucalyptus marginata</i> Jarrah WA Endemic Alinta BESS Development Site Wagerup 6215 Alex Bodenstaff 21/03/2024 1:00pm 10 (Metres)			
Canopy Spread ~ Approx Diameter at Breast Height (DBH) - Approx Bole/Root Flare - AS 4970 Nominal TPZ - AS 4970 Nominal SRZ - Estimated Life Expectancy (ELE) - Age - Tree Type - Tree Health - Tree Structure -	5 (Metres) 1.670 (m) 2.100 (m) 15.00 (Metre Radius) 4.52 (Metre Radius) 5 - 10 Years Mature Evergreen Good Poor	Figure 11. Image of subject free	e taken an the day of Inspection at Alfrita BESS Development Site Image Source - Aboc Centre	
Observations & Comments			Additional Comments -	
Site -	Location - Character - Landscape Features - Site History - Infrastructure -	Tree Situated in Rear Yard Commercial Tree Dedicated Garden Bed	Tree is situated within a portion of the Alinta BESS Development Site Area appears to have been used as a part of the Alinta BESS Development Site Tree is in a tree dedicated fenced garden area Bushfire appears to have come through this area, causing extensive fire damage Works are proposed around this tree, however should these works stay 15m away from the tre the likelihood of damage to the remaining root system is relatively low.	
Health -				
	Leaf Colouration - Leaf Size - Canopy Density - Wound Occlusion - Seasonal Growth -	Good Good Good Acceptable Good	For what canopy remains overall health is good, however it consists primarily of epicormic regrowth Tree has been significantly damaged from previous bush fire. Flowering and seed generation were noted at the time of inspection - refer recommendations below	
Canopy Structure -				
	Previous Failures (mm) - Deadwood (mm) - Hollows (mm) - Rubbing/Crossing Stems (mm) - Unions - Taper - Decay - Cracks - Suppression - Symmetry - Previous Pruning - Form -	400+ 400+ 300+ None Noted Acceptable, Questionable Acceptable Yes - Main Stem Yes - Main Stem Yes - Main Stem None Noted A-Symmetrical None	Major stem failures are evident from the main stem, main leader has failed post bushfire and hollowed out a portion of the trunk Significant deadwood from previous bushfire, present in and around the subject tree High habitat value Epicormic regrowth has formed weak points of attachment to the main stem Minor decay noted within the main stem (appears to be from the bushfire), however basal area Major fire damage to the Canopy, Basal area, Roots and Main Stem Canopy has been reduced to epicormic regrowth Tree does not appear to have been pruned previously Canopy has been reduced to epicormic regrowth	
Root Circumstance -	Damage -	Yes - Major	Significant root damage was noted to the root system of the subject tree Tree has had works happen around it (installation of a fence, etc.), however this is considered	
	Encroachment - Girdling - Surface Roots - Scalping - Base Movement -	Yes - Minor None Noted Yes - Major None Noted No	minor in the form of encroachment	
Acoustic Sounding -	Hollow Sounding -	Yes - Main Stem	Main Stem appears to be hollow sounding (using a Thor 710 Acoustic Hammer), however bas area does not sound hollow	
	Visual Decay -	Yes - Main Stem	Decay noted from the fire damage	
Pest and Disease -	Sporophores - Pests -	None Noted None Noted		
Soil -	Drainage Issues - Shallow - Compaction - Soil Type -	None Noted None Noted None Noted Clay		
Recommendations -				





Appropriate detection and pain test of consistent a read development of a tree specific management plan (including a seed collection schedule, successional planting plan, pruning Retain (Conditional) - Seek Further Arboricultural Preliminary Recommendation -Advice regime, etc.) Implementation of an Arboricultural Management Plan for the subject tree, will capture seed collection/successional planting plan; Undertaking of remedial measures (both rootzone and aerial), which may include - removal of existing debris, mulching of rootzone, developing tree Monitor and Inspect, Undertake Remedial retention specifications, etc. and develop an ongoing management process to assist in the trees Tree Management Works -Measures, Undertake Seed Collection recovery and future works. Removal of deadwood should be undertaken (this could be stored within the tree protection zone as habitat sections should the client want this to occur); Collection of seed from the subject tree t commence the successional planting process; and potential thinning of epicormic regrowth to Specific Pruning duce the likelihood of branch failure Deadwood Only **O** 11 Ventical C Wed Jan 31 2024 nearmap Figure 12. Ae ge of subject tree after 8 y ars of recovery - image source <u>www.Nearmap.com -</u> image date 31st January 2024

nearmap

Figure 13. Aerial image of subject tree post 2016 bushfire. - image source www.Nearmap.com - image date 13th January 2016

Tree appears to be to have previously been significantly damaged by bushfire and has a limited useful life expectancy, however in implementing ongoing management works to develop an appropriate successional plan this tree could become a focal portion of the proposed works -



Appendix B: Overview of Australian Standards AS 4970, AS 4373 & AS 2303

AS 4970 'Protection of Trees on Development Sites' 2009

To successfully incorporate trees into the urban environment, careful consideration, planning and protection should be afforded to both above and below ground parts of the tree - leaves, branches, stems of the above ground parts and below ground, absorbing roots and structural roots.

The operations and activities associated with the construction and development process can have adverse effects on tree health and stability. Those activities that can potentially impact on the tree(s) will require remedial measures to be taken prior to, during and post development to ensure that all reasonable measures are taken to offset such damage.

Damage to tree roots is often irreversible and a common cause of tree decline and/or death following the construction and development phase. The implementation of a Tree Protection process will help lessen the impact that proposed development will have on the root zone (resulting from grade changes, excavations, soil compaction, mechanical damage etc...) and enable timely remedial action to help the tree to retain enough root mass for the continuation of natural growth and development.

Australian Standards have created AS 4970 'Protection of Trees on Development Sites' 2009 that addresses many of the issues that construction and development can have on trees and specifies a process on how to avoid unnecessary damage and outlines guidance only on measures to protect tree welfare during the construction and development phase.

It is important to recognise that the TPZ's identified in this report are simply an indicative measurement of a boundary around the tree beyond which disturbance is considered inconsequential and is unrestricted. However, the main purpose of this circumference around the tree is to recognise that the works proposed within the indicative boundaries have been assessed, modified (where applicable) and approved by a suitably qualified person (minimum) Australian Qualification Framework Level 5 Arborist (AQF 5 – *Diploma in Arboriculture*) prior to the commencement of works.

Where encroachment (building, construction, excavation, landscaping or otherwise) into the Tree Protection Zone is required, Arboricultural input will be necessary to assess the extent of potential impact that may occur and if required, provide Arboricultural measures that can be taken to enable modification of the TPZ and allow root zone encroachment to occur.

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In addition to the above and as recognised in the Australian Standard, all tree preservation recommendations need to appreciate the individual tree characteristics, tolerances that the species possess, the site-specific soil type(s), and other environmental conditions or circumstances that are specific to the site.

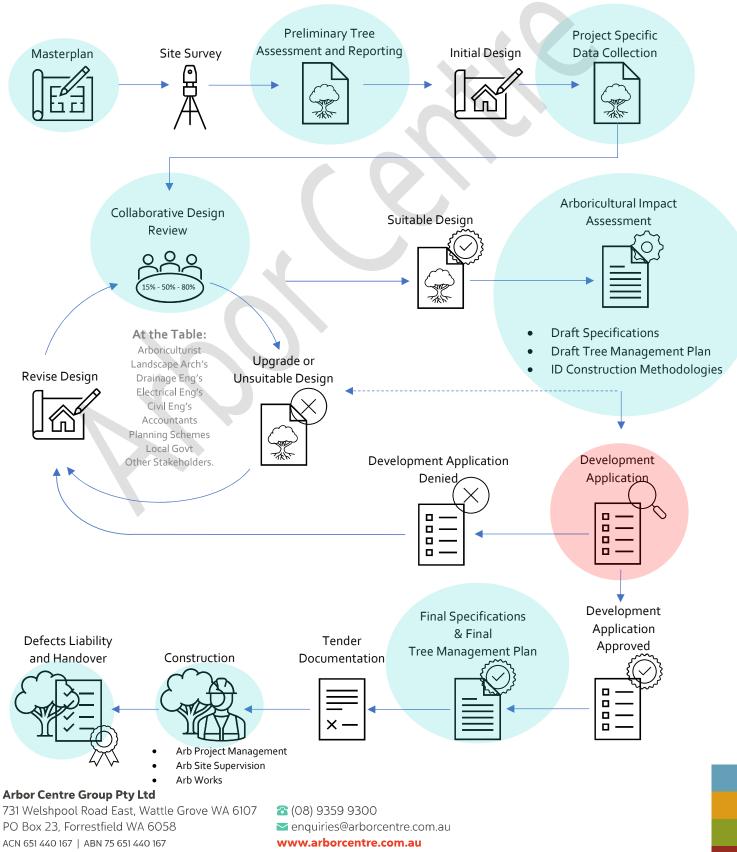
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AS4970 Workflow process

Arboricultural assessments, data collection, reviews, and documentation for tree retention in urban developments



AS 4373 'Pruning of Amenity Trees' 2007

AS 4373 '*Pruning of Amenity Trees*' 2007 has been developed to provide a guide on tree pruning procedures and practices to limit poor or deleterious type pruning being unnecessarily inflicted onto amenity trees.

The result of incorrect pruning of a tree is often irreversible, can negatively impact its health and structure and create unnecessary hazards within and surrounding the trees.

Correct tree pruning practices can reduce the likelihood of branch failures, limit pest and disease infestations, improve site safety and tree amenity, encourage sound structural development and extend tree longevity.

Any pruning works undertaken to the assessed trees should be specified by a (minimum) Australian Qualification Framework Level 5 Arborist (AQF 5 – *Diploma in Arboriculture*); comply with the Australian Standards AS 4373 '*Pruning of Amenity Trees*' 2007 and be undertaken by suitably trained and qualified Arborists with a minimum AQF Certificate 3 in Arboriculture under the supervision of the Arbor Centre.

AS 2303 'Tree Stock for Landscape Use' 2015

It is essential that the tree specimens selected for planting are fit for purpose, in good condition and not compromised at the time of planting.

This includes -

- Appreciating that the investment in a tree is in the root system that it needs to sustain itself through to maturity; not the size of the canopy mass as a seedling or sapling or as a semi mature tree.
- Trees require structurally sound root systems to establish into the landscape and thrive over the long term. This can be supported by ensuring trees are produced in a manner such that the tree's root system is reasonably free of root entanglement and; that the ratio of above ground dynamic (canopy) mass is proportional to a healthy below ground dynamic (root) mass. AS 2303 'Tree stock for landscape use'; is an Australian Standard that provides guidance in achieving this by providing quantifiable tree performance measures that can be used as KPI's for the contract growing of trees. Management of tree production using Australian Standard AS 2303 should be exercised by a suitably qualified Arboriculturist/Horticulturists.
- Recognizing the importance of maintaining stock quality, despite potential changes to planting dates and timeframes, (as this is not covered under Australian Standards) – i.e. that the holding of stock beyond the time when it was selected and approved for planting, may require re-potting

or other treatment (to avoid irreversible root entanglement, that compromises the capacity of the tree to perform to expectations in the longer term).

• Ensure trees receive appropriate and sufficient preparation prior to planting and after care post planting.

References: AS 4373 2007, AS 4970 2009. AS 2303-2015

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Pervious paved surfaces

The use of aggregate layer beneath Pervious paved surfaces (Permeable &/or Porous type paving – refer figure 14) provides benefit that include creating soil accessibility for tree roots, Soil moisture harvesting, Stormwater harvesting, and can help in mitigating pavement trip hazards.

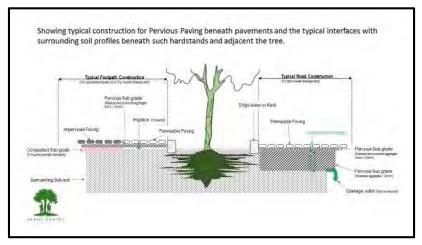


Figure 14. Diagrammatic example of how pervious paving may be utilised within the landscape –-Image property of Arbor Centre

Root canals

• The use of **root canals** (refer figure 15) utilizing secure areas near tree plantings for tree root development so as to minimize the need for rootable soil space immediately surrounding the tree.

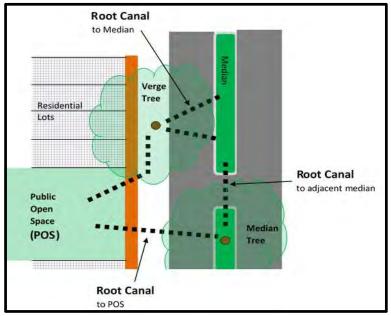


Figure 15. Showing root canal possibilities to consider in urban design – image property of Arbor Centre

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Water Sensitive Urban Design (WSUD)

Consideration should be given to the Implementation of WSUD water harvest and storage strategies throughout the site to minimize storm water runoff and better utilize and manage water from rain events (refer figures 16, 17 & 18).

Strategies may include (but may not be limited to);

- 1. Use of permeable and/or porous paving on roads, footpaths and parking bays etc.
- 2. Installation of below ground water storage cells.
- 3. Installation of rain gardens, swales etc...



Figure 16. Water Sensitive Urban Design - Image Source - https://www.watersensitivesa.com/aila-award-winning-projects-embrace-wsud/



Figure 17. Permeable paving-. Image Source <u>https://treenet.org/wsud-</u>research-applied-latest-addition-symposium-resources/



Figure 18. Treenet Inlet. Image Source https://spacedownunder.com.au/resources/

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Geoweb Information

GEOWEB® LOAD SUPPORT

The GEOWEB[®] load support system stabilizes the selected infill and provides economical solutions to unstable surface or base problems in three key areas: 1) a load distribution system over weak soils, 2) base stabilization for paved surfaces and 3) surface stabilization for unpaved surfaces.

- · Significantly minimizes surface rutting.
- Distributes loads laterally and reduces vertical deflection and subgrade contact pressures.
- Controls shearing and lateral movement of the coarse and permeable infill material.
- With open aggregate infill, reduces storm water runoff and creates on-site water detention/ retention basin.
- In most cases, the GEOWEB[®] system doubles the effective structural number for load support, reducing base requirements by half.

TYPICAL APPLICATIONS

- site access roads
- · permeable, load-
- supporting surfacesroadway shoulders
- roddwdy shoulders
- intermodal/port facilities
 transportation/storage yards
- stabilized drainage layer
- trails and walkways
- track ballast and subballast structures
- stabilized base for asphalt or modular block pavements
- boat ramps/low water crossings
- foundation mattresses and pipeline protection





load support

 Perforations and a textured surface increase the friction angle between aggregate infill and the cell wall, generating better aggregate lockup and greater overall load distribution. Perforations facilitate lateral cell-to-cell drainage of excessive ground and surface water, reducing the negative effects of trafficking over saturated soils.

Figure 19. Example of GeoWeb product – Image source https://www.geofabrics.co/sites/default/files/brochures/Geoweb-General-Brochure-M056-10-14NZ.pdf



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Figure 20. Example of GeoWeb product being installed within Epsom Avenue, Belmont - Image source City of Belmont (WA)

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Appendix D – Infrastructure Protection Treatments

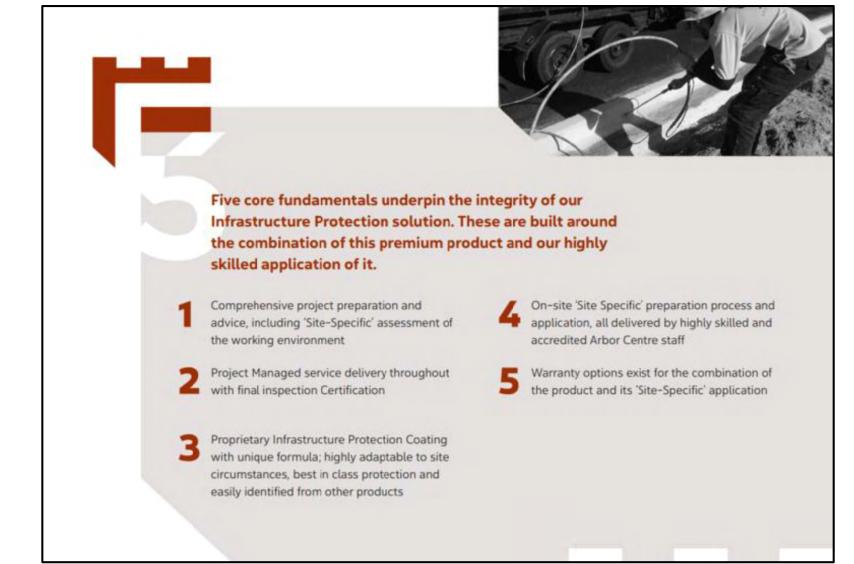


Figure 21. Example of Fortress5 – Image source Arbor Centre Rev 1 – Wagerup Scar Tree (Alinta's Proposed Battery Energy Storage System (BESS) Development Site) - Visual Tree Assessment (VTA) – March 2024



If you have any queries or if we can be of further assistance, do not hesitate to call the Arbor Centre office on (08) 9359 9300.

Regards,

1

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On Behalf of **Rob Bodenstaff – Director – Arboricultural Consultant** Grad. Cert. Arb Melb. Uni. Adv Dip.Arb & Hort. Murdoch

DISCLAIMER:

ISA Arb. (AU-0015A)

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• The provision of misleading or incorrect information to Arbor Centre upon which this advice was founded;

• The uses of this advice in circumstances or situations other than the specific subject of this advice;

· Failure by the Client to follow this advice;

• The action(s) or inaction(s) of the Client or any other party that gives rise to loss or damage to the subject of this advice;

• The information provided may not be reissued or printed without the authors permission.

COMPANY DETAILS:

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WAGERUP BATTERY ENERGY STORAGE SYSTEM – CIL CONTRIBUTION PROPOSAL

Lot 702 on Deposited Plan 59305

CONTENTS

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1 BACKGROUND

This proposal has been prepared by Alinta Energy Development Pty Ltd (Alinta Energy), as a response to the Shire of Waroona's request for further information to assist with the assessment of Alinta Energy's development application for the proposed battery energy storage system (BESS) at Lot 702 on Deposited Plan 59305, Wagerup (the Site) (**Figure 1**).

There are several Jarrah/Marri trees within the Site that are proposed to be cleared for the BESS project (**Figure 2**), indicated by the purple dashed line in **Figure 1**. This proposal demonstrates how the provisions of Shire of Waroona's *Local Planning Policy 17 – Vegetation* (the Policy) will be achieved for this project. The objectives of the Policy are to encourage and facilitate the protection of vegetation worthy of retention and enhance vegetation extent by:

- 1. Encouraging development to respond to the protection of existing vegetation and enhancing its area, condition and value.
- 2. Balancing the protection of vegetation worthy of retention, the desired built form and land use outcomes at the earliest possible stage in the planning and development process.
- 3. Protecting and enhancing vegetation extent and coverage to assist with:
 - a. Reducing the urban heat island effect;
 - b. Reducing air pollution and facilitating carbon sequestration;
 - c. Improving surface and groundwater quality; and
 - d. Contributing to habitat for wildlife, ecological corridors and native biodiversity.
- 4. Maintaining and enhancing the amenity, character and sense of place through the protection and enhancement of vegetation.
- 5. Applying a "mitigation hierarchy" to decision making to:
 - a. Avoid clearing of established vegetation worthy of retention;
 - b. Minimise harm to vegetation worthy of retention;
 - c. Rehabilitate vegetation on site; and
 - d. Offset where avoidance and rehabilitation cannot be achieved, fund Cash-In-Lieu contributions for planting within the locality.
- 6. Ensuring that any land use or development in close proximity to, or containing a natural area, is compatible with the long-term maintenance and conservation of that natural area, and will not have detrimental impacts on biodiversity.

Alinta Energy will only clear trees to the extent necessary for the proposed BESS. As the loss of several trees will occur for the proposed BESS, Alinta Energy proposes to achieve a Net Gain in vegetation to satisfy the objectives of the Policy through a cash-in-lieu contribution being made to the Shire of Waroona.



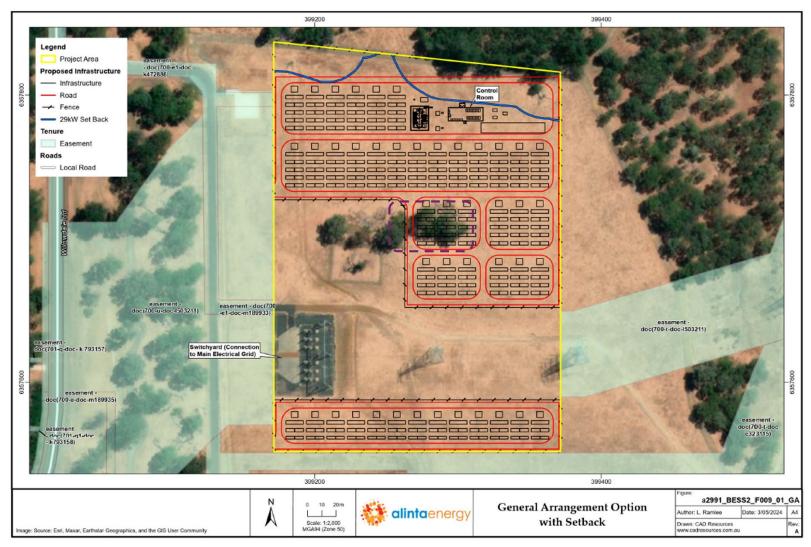


Figure 1: Proposed BESS development within the Site.



4 Classification: CONFIDENTIAL - PI



Figure 2: Trees proposed to be cleared for proposed development.



5 Classification: CONFIDENTIAL - Pl

2 CASH-IN-LIEU CONTRIBUTION

2.1 Net Gain ratios

The Policy states that 'a net gain must consist of the same species and/or community that is proposed to be, or has been, cleared'. Table 1 lists the relevant ratios extracted from the Policy's Net Gain ratios table.

Table 1: Net Gain ratios

Species	Net Gain ratios for proposals	Numbers recorded
Jarrah		
DBH +300mm	16:1	4
DBH -300mm	8:1	2
Marri		
DBH +500mm	12:1	2
DBH -500mm	6:1	8

Using the net gain ratios above, it is calculated that planting of 152 plants within the locality is required to achieve a net gain for this project.

2.2 Costing for CIL contribution

The costing below is based on the planting specifications detailed in the Policy and Alinta Energy's cash-in-lieu payment for modification to Development Approval TP2195.2.

Table 2: Planting specifications and costing for CIL contribution

Component	Amount	Note	
Trees	\$7,600	45 Litre Grow bags (\$50 each)	
Tree/plant protection	\$400	Naturguard Bio Mini Guard Bamboo canes for tree guards	
Mulch	\$2,835	Organic mulch	
Soil conditioner	\$743	TerraCottem Universal Soil Conditioner	
Watering	\$6,000	1-2 times per week over 2 summers	
Bonds, Shire work & CIL	\$4,394.50	25% of total components above	
	TOTAL	\$21,972.50	

3 CONCLUSION

Alinta Energy will only clear trees to the extent necessary for the proposed BESS, avoiding and minimising harm to trees that are being retained within the Site. Rehabilitating vegetation within the Site was not considered due to the nature of the proposed development. As such, Alinta Energy is proposing a cash payment of \$21,972.50 in lieu of all the required Net Gain planting to offset the unavoidable clearing of trees for the proposed Wagerup BESS development on the Site.



Our Ref: D32235 Your Ref: TP2487

Craig Zanotti Shire of Waroona splanner@waroona.wa.gov.au

Dear Mr Zanotti

RE: HIGH RISK LAND USE - LOT 702 WILLOWDALE ROAD, WAGERUP – BATTERY ENERGY STORAGE SYSTEM - DEVELOPMENT APPLICATION

I refer to your email dated 21 May 2024 regarding the submission of a Bushfire Management Plan (BMP) (Version 1.1), prepared by Bushfire Prone Planning and dated 6 May 2024, for the above development application.

This advice relates only to *State Planning Policy 3.7: Planning in Bushfire Prone Areas* (SPP 3.7) and the *Guidelines for Planning in Bushfire Prone Areas* (Guidelines). It is the responsibility of the proponent to ensure the proposal complies with relevant planning policies and building regulations where necessary. This advice does not exempt the applicant/proponent from obtaining approvals that apply to the proposal including planning, building, health or any other approvals required by a relevant authority under written laws.

<u>Assessment</u>

- DFES acknowledge that the site is currently for a 300MW battery energy storage system located on the same lot as the existing Alinta substation, this is a recognised constraint.
- DFES have assessed the proposal against the CFA Design Guidelines and Model Requirements - Renewable Energy Facilities (REF) v4 (August 2023) which is considered best practice for the assessment of renewable energy facilities.
- Further clarification is required within the BMP of the requirements of SPP 3.7, and the supporting Guidelines as outlined in our assessment below.

1. Policy Measure 6.5 a) (ii) Preparation of a BAL contour map

Issue	Assessment	Action
Vegetation classification	Evidence to support the management of 10 metres outside the lot boundary as managed to low threat in accordance with AS3959 is required. An enforceable mechanism is required to provide certainty that the proposed management measures can be achieved in perpetuity and that they are enforceable.	Impact to BAL rating. Modification to the BMP is required.
	Evidence of a legal and binding agreement should be included in the BMP to qualify the vegetation exclusion can be achieved and under what legislative instrument it is enforceable in perpetuity.	

	If unsubstantiated, the vegetation should be classified as per AS3959, or the resultant BAL ratings may be inaccurate.	
Consultation	In the event that an approval is granted, the DFES District Officer responsible for this region and the local fire and emergency services should be consulted during the development, construction and leading up to the commissioning of the facility. It is critical for the local fire and emergency services to understand the hazards present in the facility and the measures required to ensure the safety of fire-fighting crews when working in or around different parts of the facility. This may impact on how the crews respond to a fire in the facility, which may in turn have ramifications in regard to the optimal number and location of water supplies.	Comment only.
Risk Management Plan	A Risk Management Plan (RMP) that describes the infrastructure and risk and hazards on site has not been provided. An RMP is a critical requirement of planning to inform fire risk management in the design and operation of facilities. An RMP is also required as per policy measure 6.6 of SPP 3.7.	A Risk Management Plan is required.
	As per the REF Guidelines: a Risk Management Plan describes the risk management process and its outcomes, including the specific site hazards/risks and their analysis, control measures, and the monitoring and review process. The Risk Management Plan must inform the design of the facility.	
	A Fire Management Plan is based on the outcomes of the Risk Management Plan and outlines the activities, processes and accountabilities for the ongoing management of fire risk at the facility.	
Administrative Error	Photo 3 is being used to support Area 2 but the photo direction point would support Area 1.	Modification to the BMP is required.

2. Policy Measure 6.5 c) Compliance with the Bushfire Protection Criteria

Element	Assessment	Action
Location	Intent – does not comply The development is on a lot that has, and is surrounded by, an extreme hazard that, in the opinion of DFES, cannot be adequately managed. The development of a high-risk land use at this location does not comply with the intent of Element	Does not comply.
	1 of the Guidelines. The REF Guidelines require that a proposed BESS be located outside of a bushfire prone area,	

	or that they be located within a moderate hazard level i.e. open paddock. The Fire Risk Management Principles of the REF also states <i>that renewable energy infrastructure should be sited so as to eliminate or reduce hazards to emergency responders</i> . The BESS is adjacent to an extreme hazard to the east which may, given the singular access route, become an entrapment hazard for attending firefighters. Furthermore, evidence is required that the proposal meets the separation distance requirements (whichever is greater) to ensure: a) that radiant heat from a nearby bushfire will not trigger a failure in the infrastructure (whatever the most susceptible component is); and b) that radiant heat emitted from a failure in infrastructure will not trigger a bushfire. The technical specification of the infrastructure should be used to inform the minimum separation distance required (i.e. radiant heat level that the weakest component can withstand) and provided to demonstrate compliance. Sufficient evidence in the form of technical specifications and/or standards should be provided. Typically, through the review of other proposed BESS in WA, the components are generally subject to a maximum radiant heat level of 10KW/m2. On this basis, sufficient information should be provided to demonstrate that the components will be able to withstand the radiant heat that they would be subjected to in the event of a bushfire.	
Siting & Design	 A2.1 - not demonstrated The development has not been designed appropriately to ensure bushfire protection measures can be achieved and to minimise the level of bushfire impact to people that are considered vulnerable. The APZ is located outside the lot boundary and depends on an arrangement with the neighbouring landowner to achieve the BAL rating required. A 10-metre firebreak is also required to be located within the lot boundary to achieve compliance with the REF Guidelines. The decision maker should be certain that this can be achieved before approval. The Alinta lot is a moderate hazard and currently acts as a buffer between the existing high-risk land uses and the adjacent extreme hazard, however the BESS proposal is reducing the hazard separation between high-risk land uses and the adjacent extreme vegetation. 	Modification to the BMP is required.

Vehicular Access	 A3.1 – not demonstrated The BMP incorrectly states that compliance has been achieved. The lot does not have public road access. A portion of Willowdale Road is privately owned by Alcoa as it enters Lot 700 (184) Willowdale Road. The public portion of Willowdale Road continues to the Alcoa Minesite. The Alinta owned lot is landlocked within the Alcoa owned lot and has no public road frontage. The BMP states that the Guidelines do not consider private roads and on that basis has assumed compliance, however the Guidelines have an acceptable solution which states that the lot should have access to a public road. The BMP states that the Shire is a custodian of the portion of Willowdale Road within the Alcoa owned lot, however no evidence of this has been provided. In addition, there is an 	Modification to the BMP is required. Please demonstrate compliance or provide substantiated evidence of a performance principle- based solution.
	access leg required to the development site which would not fall under the custodianship of the Shire. It is unknown if there is an easement in favour of Alinta to use the existing roads and to create access legs into the BESS facility.	
	 A3.2a – compliance cannot be achieved The development site is approximately 3 kilometres from the intersection of Southwestern Highway which provides access in multiple directions. A3.2a has a provision for development on a no-through road exceeding 200 metres which is demonstrating that the no-through road travels towards a suitable destination. This could be argued as Willowdale Road adjoins Southwestern Highway which would provide access to a suitable destination. However, A3.2a also requires the balance of the no-through road in excess of 200 metres to be wholly within BAL-LOW. This cannot be achieved at this location. The acceptable solution for A3.2a cannot be met and a performance principle has not been provided. Furthermore, the BMP states that the Alcoa Aluminium Refinery is a 'suitable destination' as it is within an area of BAL-LOW, this has not been demonstrated in the BMP and the refinery would be considered high-risk land use. A suitable destination is generally a place that people evacuate to in the event of an emergency that will provide amenity and shelter. Sheltering onsite is considered a last resort option, particularly given the adjacent extreme hazard. A secondary access is required to allow emergency services and onsite personnel multiple options in the event of a bushfire for access and egress. 	Compliance cannot be achieved.
	A3.6 – insufficient information The BMP states that the driveway has loop access and can provide access to all areas within the development site. However, the driveway is not clearly shown on any of the development plans.	Modification to the BMP is required

	The REF Guidelines requires a minimum of two access egress points to a BESS facility of this size, the BMP only proposes one.	
Water	A4.2 – not demonstrated The BMP states that a 2,000,000L water is located outside the lot boundary which will service the reticulated system on the site. The tank is not dedicated to the facility and it is unknown who is sharing the tank and for what purpose it is being used. It is unclear if the tank is dedicated for firefighting or if it is also being used for domestic purposes.	Modification to the BMP is required.
	 Dual purpose tanks are not supported as the acceptable solution is for a tank to be installed which is dedicated for firefighting purposes for the following reasons: The use of domestic water for firefighting purposes is prohibited under the <i>Bushfires Act 1954</i>. In the event of an emergency incident firefighters may drain the entire domestic tank in suppression efforts. Until the tank is refilled residents cannot return to their homes. 	
	 When a tank, used mainly for domestic purposes, is entirely emptied the sediment at the bottom of the tank may be disturbed when re-filling which can make the water unpotable. There is no guarantee that the tank will have the reserve of 10,000L as this is at the discretion of the landowner. 	
	In addition the REF Guidelines require the tank to be located at the entry point to the facility, and for the hydrant system to be located so that every part of the battery energy storage system is within reach of a 10m hose stream issuing from a nozzle at the end of a 60m length of hose connected to a fire hydrant outlet.	

DFES Built Environment Branch Comment

Vehicle Access Requirement

- 1.1 To enable firefighting intervention, a road network must provide access to all areas of the facility, including fire service infrastructure, buildings, battery energy storage systems and related infrastructure, substations and grid connection areas. This road network should include at least two access points to each part of the facility. A perimeter road with a minimum width of 4 metres should be provided around the BESS and all associated infrastructure.
- 1.1 Internal access roads, the perimeter road and fire appliance hardstands should be of allweather construction.

Firefighting Water Supply

1.2 Plans showing the location, layout and detail of the proposed onsite fire hydrant system should be provided. Water access points must be clearly identifiable and unobstructed to ensure efficient access.

- 1.3 A fire hydrant hose coverage plan demonstrating that coverage throughout the BESS and associated infrastructure is achieved via two lengths of hose (in accordance with AS2419.1) should be provided.
- 1.4 Further detail is required to determine the appropriateness of the existing water storage tank for firefighting purposes. These details should include:
 - a) The location of the tank relative to the BESS infrastructure.
 - b) The construction of the tank.
 - c) Identification of all other connections to this static water supply (e.g. industry process, potable, reticulation).
 - d) Existing maintenance arrangements (e.g. single, split or multiple tanks).
 - e) The management in-use provisions implemented to ensure that a minimum fourhour supply at 30L/s of effective tank capacity will be available at all times for firefighting purposes.
 - f) Method of refilling the water storage tank. Noting that the effective capacity for firefighting water must be capable of being completely refilled within 24 hours.
 - g) The firefighting connections available to the tank (e.g. hard suction storz and camlock).
 - h) An external water level indicator must be provided to the tank.
 - i) Signage indicating 'FIRE WATER' and the effective capacity for firefighting must be fixed to each tank.
 - j) Signage should be provided at vehicle entrances to the facility, indicating the location of the tank.

Recommendation - not compliant with acceptable solutions or intent

The development application is not compliant as it does not meet the intent of Element 1: Location and Element 3: Vehicular Access. The proposal is intensifying land use in a bushfire prone area with only one point of access and egress.

If you require further information, please contact me on telephone number

Yours sincerely



DIRECTOR LAND USE PLANNING

17 June 2024

OFFICIAL



Your ref: TP2487 Our ref: RF17-06, PA 060540 Enquiries:

Shire of Waroona PO Box 20 Waroona WA 6215

Attention: Craig Zanotti

Dear Craig

LOT 702 WILLOWDALE ROAD, WAGERUP – PROPOSED DEVELOPMENT APPLICATION –BATTERY ENERGY STORAGE SYSTEM

Thank you for providing the development application received via email on 6 December 2023 for the Department of Water and Environmental Regulation (Department) to consider.

The Department has identified that the proposed battery storage system has the potential for impact on environment and water resource values and/or management. In principle the Department does not object to the proposal however key issues, recommendations and advice are provided below and these matters should be addressed.

Issue

Industry Regulation

Advice

As the new 300MW battery energy storage system (BESS) will be located outside of the prescribed premises boundary for L8174/2007/5, and the BESS on its own does not meet any of the prescribed premises categories outlined in Schedule 1 of the *Environmental Protection Regulations 1987*, it is not subject to the requirement to obtain a works approval prior to construction or to hold a licence to cause emissions or discharges.

The applicant should however ensure that they are aware of the provisions of section 53 of the *Environmental Protection Act 1986* (EP Act) which outlines obligations for certain types of changes to an existing prescribed premises to be approved. Under the Department's Regulatory Framework, the appropriate mechanism for obtaining approval (if required) is through the grant or amendment of a works approval or licence. This approach allows the Department to carry out an assessment of the risks associated with the proposed change and update the works approval or licence controls accordingly, if required. If changes are required at the existing Wagerup Power Station located on Lot 701 on Deposited Plan 59305 to implement the Development

Application, the applicant should consider whether the provisions of Section 53 of the EP Act apply to the proposed changes.

The premises may also be subject to conditions under Ministerial Statement 729 and may be an amendment to the proposal. Advice should be sought from EPA through a request via Environment Online.

Issue

Native Vegetation Protection

Advice

Under section 51C of the *Environmental Protection Act 1986* (EP Act), clearing of native vegetation is an offence unless:

- it is undertaken under the authority of a clearing permit
- it is done after the person has received notice under Section 51DA(5) that a clearing permit is not required
- the clearing is subject to an exemption

Exemptions for clearing that are a requirement of written law, or authorised under certain statutory processes, are contained in Schedule 6 of the EP Act. Exemptions for low impact routine land management practices outside of environmentally sensitive areas (ESAs) are contained in the *Environmental Protection (Clearing of Native Vegetation) Regulations 2004* (the Clearing Regulations).

Based on the information provided, should development approval be issued, the proposal is likely to be exempt from the requirement for a clearing permit under Regulation 5, Item 1 of the Clearing Regulations.

Note that this exemption does not apply prior to development approval being issued.

Please also note that that clearing for a building/structure, combined with other exempt clearing activities on the property, must not exceed five hectares in a financial year.

This exemption is described in the Departments '<u>A Guide to the Exemptions and</u> <u>Regulations for Clearing Native Vegetation</u>'. It is the applicant's responsibility to determine compliance with these exemptions and therefore whether a clearing permit is required. If there is uncertainty, then the precautionary principle should be applied, and it is recommended applicants apply for a clearing permit.

If further clarification is required, please contact the Department's Native Vegetation Regulation section by email (<u>admin.nvp@dwer.wa.gov.au</u>) or by telephone (6364 7098).

Where the Department has a statutory role, planning applications should be considered prior to the Department issuing any relevant permits, licenses and/or approvals.

In the event that the applicant determines that a works approval or licence application is required under Part V of the *Environmental Protection Act 1986* (EP Act), the advice provided in this communication does not prejudice and must not be considered to infer the outcome of the EP Act licence and works approval process. In the event there are modifications to the proposal that may have implications on aspects of environment and/or water management, the Department should be notified to enable the implications to be assessed.

Should you require any further information on the comments, please contact the undersigned at the Mandurah office on second seco

Yours sincerely

A/Program Manager – Planning Advice Kwinana Peel Region

08/01/2024

OFFICIAL



Department of Planning, Lands and Heritage

> Our ref: ADV Enquiries:

ADV-110003113

Craig Zanotti Shire of Waroona

Via Email: eplanning@waroona.wa.gov.au

Dear Mr Zanotti

PROPOSED BATTERY ENERGY STORAGE SYSTEM WITHIN LOT 702 ON DEPOSITED PLAN 59305, SHIRE OF WAROONA

Thank you for the email, via Dakota Seubert, Development & Building Officer, on 6 December 2023 regarding the proposed Battery Energy Storage System within Lot 702 on Deposited Plan 59305, Shire of Waroona.

A review of the Register of Places and Objects, as well as the DPLH Aboriginal Heritage Database, concludes that the subject area does not intersect with the boundaries of any known Aboriginal Sites.

Therefore, based on the current information held by DPLH, no approvals under the *Aboriginal Heritage Act 1972* (AHA) are required for ground disturbing works within the project area.

Please note that Aboriginal heritage place ID 23432 (Wagerup Scarred Tree) is located within the subject lot and extremely close vicinity to the project area. DPLH advises caution is undertaken when working within this location and should the project footprint or heritage measures in place change, please contact Aboriginal Heritage Conservation for further advice.

DPLH also advises Atlinta regularly checks the Aboriginal Cultural Heritage Inquiry System (ACHIS) should new Aboriginal Cultural Heritage be reported within their subject area. They can search ACHIS by using the following link:

Aboriginal Cultural Heritage Inquiry System (dplh.wa.gov.au)

If you have any further questions regarding the AHA, please submit your enquiry via the ACHknowledge portal at <u>Home - ACHknowledge Portal (dplh.wa.gov.au)</u>.

Yours sincerely

SENIOR HERITAGE OFFICER

18 December 2023

Bushfire management plan/Statement addressing the Bushfire Protection Criteria coversheet

Site address: 184 Willowdale Road, Wagerup						
Site visit: Yes 🖌 No						
Date of site visit (if applicable) 1 Day 18 Month March	Year	2024				
Report author or reviewer: Mike Scott						
WA BPAD accreditation level (please circle):						
Not accredited Level 1 BAL assessor Level 2 practitioner Level 3 practitioner	~					
If accredited please provide the following.						
BPAD accreditation number: 27795 Accreditation expiry: Month February	Year	2025				
Bushfire management plan version number: 1.0						
Bushfire management plan date: Day 6 Month May	Year	2024				
Client/business name: Alinta Energy						
	Yes	s No				
Has the BAL been calculated by a method other than method 1 as outlined in AS3959 (tick no if AS3959 method 1 has been used to calculate the BAL)?						
Have any of the bushfire protection criteria elements been addressed through the use of a performance principle (tick no if only acceptable solutions have been used to address all of the bushfire protection criteria elements)?						
Is the proposal any of the following (see <u>SPP 3.7 for definitions</u>)?	Ye	s No				
Unavoidable development (in BAL-40 or BAL-FZ)		~				

High risk land-use

Vulnerable land-use

Strategic planning proposal (including rezoning applications)

None of the above

Note: Only if one (or more) of the above answers in the tables is yes should the decision maker (e.g. local government or the WAPC) refer the proposal to DFES for comment.

Why has it been given one of the above listed classifications (E.g. Considered vulnerable land-use as the development is for accommodation of the elderly, etc.)?

The proposal includes a centralised Battery Energy Storage System which is considered a High Risk Land Use.

The information provided within this bushfire management plan to the best of my knowledge is true and correct:

mfratt



BESS Alinta Wagerup

Bushfire Management Plan (BMP)

Asessment of potential bushfire impact Furiormental conservation Asessment of the development's ability to acceptably mitigate bushfire risk through apicacion of required and/or additional bushfire protection measures Creation of responsibilities to implement and maintain protection measures

Produced to meet the relevant requirements of STATE PLANNING POLICY 3.7 Planning in Bushfire Prone Areas & Guidelines

184 Willowdale Road, Wagerup

Shire of Waroona

Development Application - High Risk Land Use

6 May 2024

Job Reference No: 240131

BPP GROUP PTY LTD T/A BUSHFIRE PRONE PLANNING

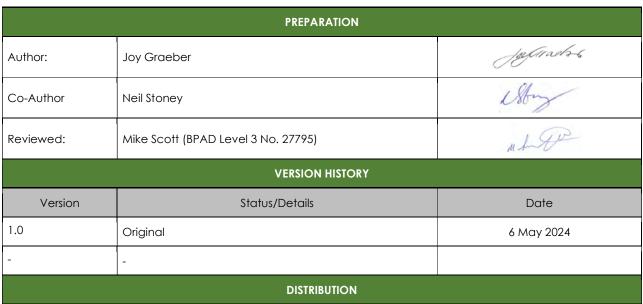
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Lina Ramlee Lina.PgRamlee@alintaenergy.com.au		1.0	1		\boxtimes

Limitations: The protection measures that will be implemented based on information presented in this Bushfire Management Plan are minimum requirements and they do not guarantee that buildings or infrastructure will not be damaged in a bushfire, persons injured, or fatalities occur either on the subject site or off the site while evacuating.

This is substantially due to the unpredictable nature and behaviour of fire and fire weather conditions. Additionally, the correct implementation of the required protection measures (including bushfire resistant construction) and any other required or recommended measures, will depend upon, among other things, the ongoing actions of the landowners and/or operators over which Bushfire Prone Planning has no control.

All surveys, forecasts, projections and recommendations made in this report associated with the proposed development are made in good faith based on information available to Bushfire Prone Planning at the time. All maps included herein are indicative in nature and are not to be used for accurate calculations.

Notwithstanding anything contained therein, Bushfire Prone Planning will not, except as the law may require, be liable for any loss or other consequences whether or not due to the negligence of their consultants, their servants or agents, arising out of the services provided by their consultants.

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BMP (Master) Template v9.18





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SUMMARY STATEMENTS

THIS DOCUMENT – STATEMENT OF PURPOSE

The Bushfire Management Plan (BMP)

The BMP sets out the required package of bushfire protection measures to lessen the risks associated with a bushfire event. It establishes the responsibilities to implement and maintain these measures.

The BMP also identifies the potential for any negative impact on any environmental, biodiversity and conservation values that may result from the application of bushfire protection measures or that may limit their implementation.

Risks Associated with Bushfire Events

The relevant risks are the potential for loss of life, injury, or destroyed or damaged assets which results in personal loss and economic loss. For a given site, the level of that risk to persons and assets (the exposed elements) is a function of the potential threat levels generated by the bushfire hazard, and the level of exposure and vulnerability of the at risk elements to the threats.

Bushfire Protection Measures

The required package of protection measures is established by *State Planning Policy 3.7 Planning in Bushfire Prone Areas (SPP 3.7),* its associated *Guidelines* and any other relevant guidelines or position statements published by the Department of Planning, Lands and Heritage. These measures are limited to those considered by the WA planning authorities as necessary to be addressed for the purpose of <u>land use planning</u>. They do not encompass all available bushfire protection measures as many are not directly relevant to the planning approval stage. For example:

- Protection measures to reduce the vulnerability of buildings to bushfire threats is primarily dealt with at the building application stage. They are implemented through the process of applying the Building Code of Australia (Volumes 1 and 2 of the national Construction Code) in accordance with WA building legislation and the application of construction requirements based on a building's level of exposure - determined as a Bushfire Attack Level (BAL) rating); or
- Protection measures to reduce the threat levels of consequential fire (ignited by bushfire and involving combustible materials surrounding and within buildings) and measures to reduce the exposure and vulnerability of elements at risk exposed to consequential fire, are not specifically considered.

The package of required bushfire protection measures established by the Guidelines includes:

- The requirements of the bushfire protection criteria which consist of:
 - Element 1: Location (addresses threat levels).
 - Element 2: Siting and Design of Development (addresses exposure levels of buildings).
 - Element 3: Vehicular Access (addresses exposure and vulnerability levels of persons).
 - Element 4: Water (addresses vulnerability levels of buildings).
 - Element 5: Vulnerable Tourism Land Uses (addresses exposure and vulnerability as per Elements 1-4 but in use specific ways and with additional considerations of persons exposure and vulnerability).
- The requirement to develop Bushfire Emergency Plans / Information for 'vulnerable' land uses for persons to prepare, respond and recover from a bushfire event (this addresses vulnerability levels).
- The requirement to assess bushfire risk and incorporate relevant protection measures into the site emergency plans for 'high risk' land uses (this addresses threat, exposure and vulnerability levels).

Compliance of the Proposed Development or Use with SPP 3.7 Requirements

The BMP assesses the capacity of the proposed development or use to implement and maintain the required 'acceptable' solutions and any additionally recommended bushfire protection measures - or its capacity to satisfy the policy intent through the justified application of additional bushfire protection measures as supportable 'alternative' solutions.



THE	PROPOSED DEVELOPMENT/USE – BUSHFIRE PLANNING COMPLIANCE SUMMARY	_			
Environmental Considerations					
	d environmental, biodiversity and conservation values limit the full application re protection measures?	No			
	d environmental, biodiversity and conservation values need to be managed and maintenance of the bushfire protection measures - but not limit their	No			
	Required Bushfire Protection Measures				
The Acc	ceptable Solutions of the Bushfire Protection Criteria (Guidelines)	Assessment Outcome			
Element	The Acceptable Solutions	ourcome			
1: Location	A1 Location	Fully Compliant			
	A1.1 Development location	Fully Compliant			
2: Siting and Design	A2 Siting and Design of Development	Fully Compliant			
of Development	A2.1 Asset Protection Zone (APZ)	Fully Compliant			
	A3 Vehicular Access	Fully Compliant			
	A3.1 Public roads	N/A			
	A3.2a Multiple access routes	Fully Compliant			
	A3.2b Emergency access way	N/A			
3: Vehicular Access	A3.3 Through-roads	N/A			
	A3.4a Perimeter roads	N/A			
	A3.4b Fire service access route	N/A			
	A3.5 Battle-axe legs	N/A			
	A3.6 Private driveways	Fully Compliant			
	A4 Water	Fully Compliant			
4: Water	A4.1 Identification of future water supply	N/A			
	A4.2 Provision of water for firefighting purposes	Fully Compliant			
	Other 'Bushfire Planning' Documents to Be Produced tional documents is determined by the proposed development/use type and iblished by SPP 3.7 and the associated Guidelines (as amended).	Required			



They may be produced concurrently or subsequent to the BMP. Relevant actions will be identified within Section 6 'Responsibilities for Implementation of Bushfire Protection Measures.	
Bushfire Emergency Plan: An operational document presenting prevent, prepare, respond and recover procedures and associated actions. As necessary, supporting information to justify determinations is included.	
Bushfire Emergency Information (Poster): As a concise response information poster for certain vulnerable land uses.	No
Bushfire Emergency Information (Content): As content for inclusion into the Site's Emergency Plan for certain high risk land uses:	No
Bushfire Risk Assessment and Management Report:	

Summary Statement: The proposed development is considered a 'high-risk' land use as defined by SPP 3.7 and its associated Guidelines.

This triggers the requirement, through the development of a Risk Assessment and Management Report to:

- Identify the level of exposure and vulnerability of any onsite stored materials and liquids to bushfire attack mechanisms (threats);
- Identify any potential source of ignition threat the use may present to adjoining and/or adjacent bushfire prone vegetation; and
- Recommend protection measures that can be incorporated into the site operations emergency plan as necessary.

The requirement for this report to be developed and any variation to content, can be decided by the planning approval decision maker (e.g., the local government). Otherwise, SPP 3.7 states it 'should' be produced.



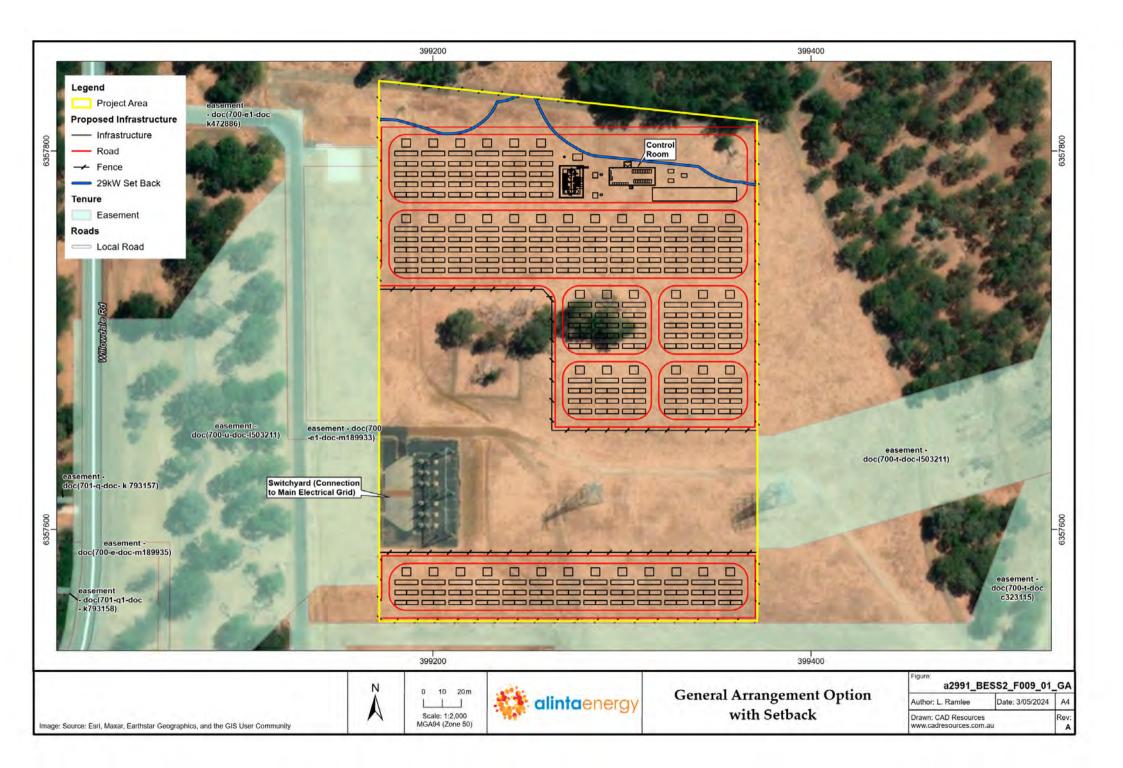
1 PROPOSAL DETAILS AND THE BUSHFIRE MANAGEMENT PLAN

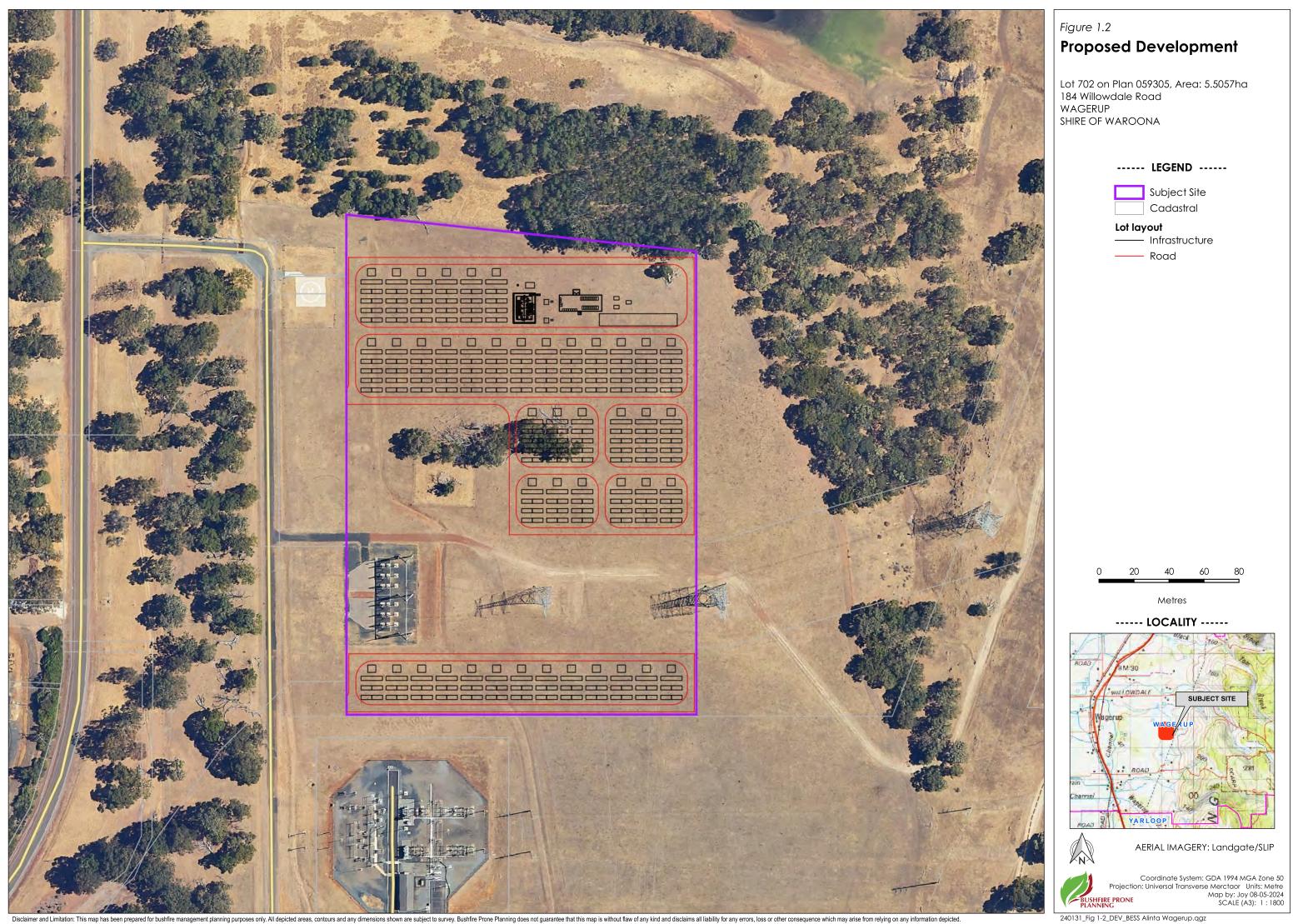
1.1 The Proposed Development/Use Details, Plans and Maps

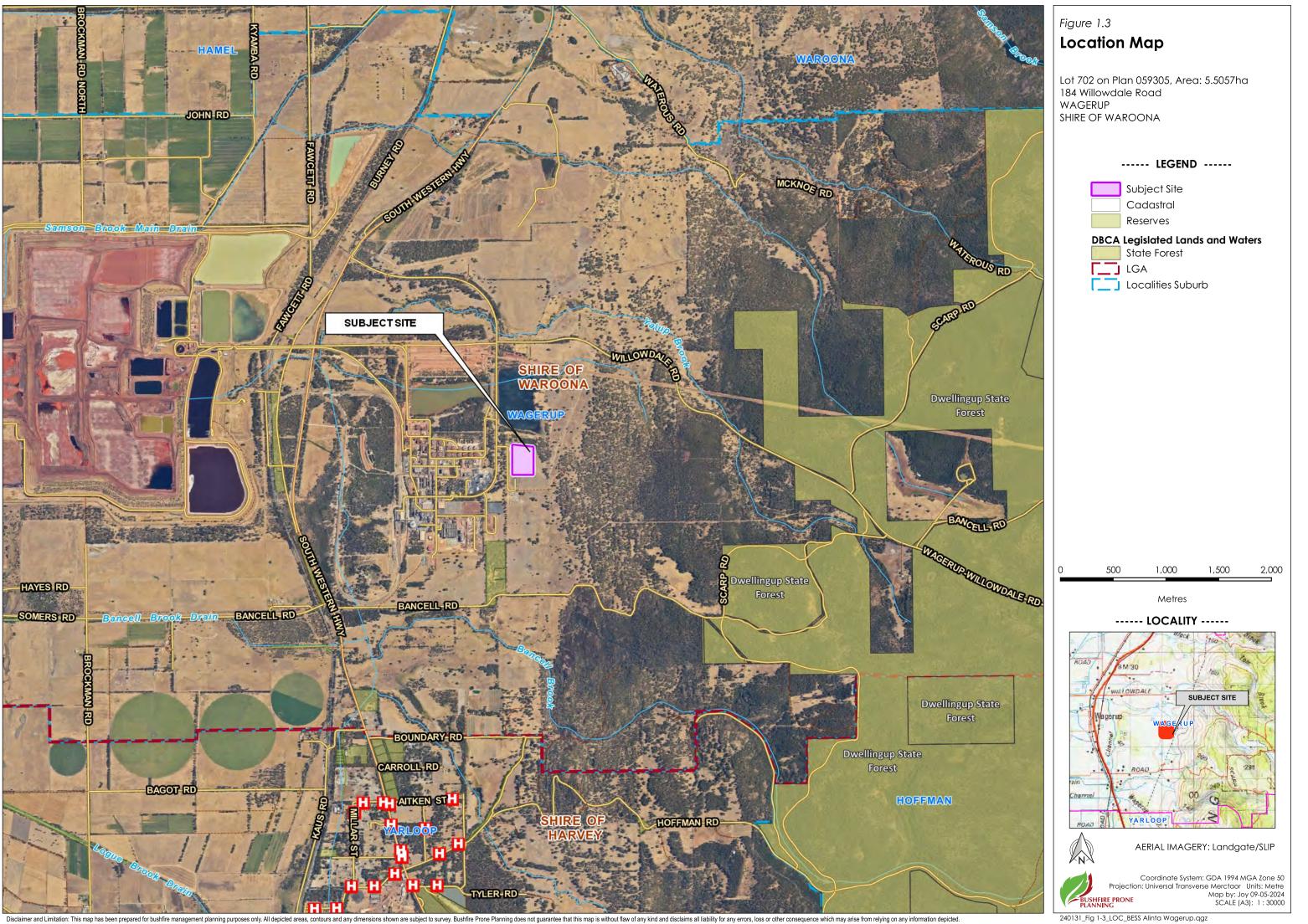
The Proposal's Planning Stage For which certain bushfire plann required to accompany the pla	-	Development Application		
The Subject Land/Site		Lot 702 (184) Willowdale Road, Wagerup. Shire of Waroona		
Total Area of Subject Lot/Site		5.5057 hectares		
Number of Additional Lots Creat	ed	N/A		
Primary Proposed Construction	Type(s)	Infrastructure		
rimary rioposea Consiluciion	NCC Classification	N/A		
The 'Specific' Land Use Type for Bushfire Planning When applicable, this classification establishes a requirement to conduct assessments and develop documents that are additional to this Bushfire Management Plan.		High Risk Land Use		
Factors Determining the 'Specific Land Use Type	c Bushfire Planning'	The land use will store combustible materials and/or flammable hazardous materials onsite that may be exposed and vulnerable to ignition from the direct attack mechanisms of bushfire (flame contact, radiant heat and embers). Business operations/activities may include those that are a potential source of ignition for onsite or offsite combustible/flammable materials, including bushfire prone vegetation.		
Description of the Proposed Dev				

The proposed development is for Battery Energy Storage System (BESS) cabinets, power conversion units, control room, and substation to be installed in a centralised system.

Alinta Energy is the proprietor of the subject Lot, which is 'floating' within the much larger Lot under the control of Alcoa of Australia. Due to the location of the subject Lot, an agreement with Alcoa of Australia is required to confirm ongoing vegetation management.









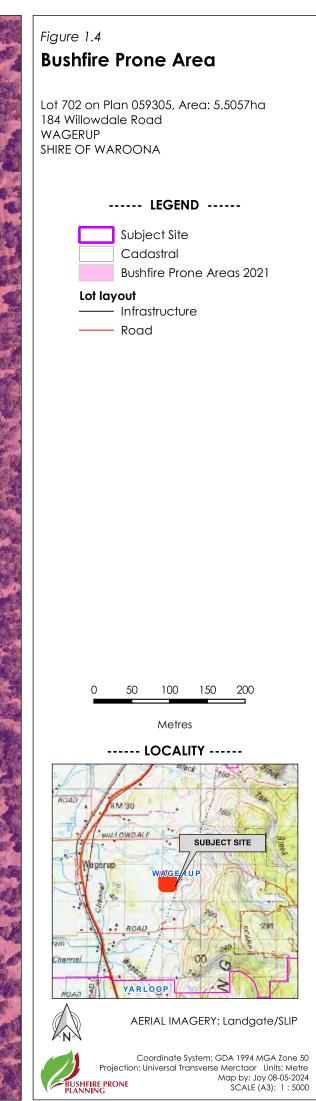
WHERE SPP 3.7 AND THE GUIDELINES ARE TO APPLY – DESIGNATED BUSHFIRE PRONE AREAS

All higher order strategic planning documents, strategic planning proposals, subdivisions and development applications located in designated bushfire prone areas need to address SPP 3.7 and its supporting Guidelines. This also applies where an area is not yet designated as bushfire prone but is proposed to be developed in a way that introduces a bushfire hazard.

For development applications where only part of a lot is designated as bushfire prone and the proposed development footprint is wholly outside of the designated area, the development application will not need to address SPP 3.7 or the Guidelines. (Guidelines DPLH 2021 v1.4, s1.2).

For subdivision applications, if all the proposed lots have a BAL-LOW indicated, a BMP is not required. (Guidelines DPLH 2021 v1.4, s5.3.1).





²⁴⁰¹³¹_Fig 1-4_BPA_BESS Alinta Wagerup.qgz



1.2 The Bushfire Management Plan (BMP)

1.2.1 Commissioning and Purpose

Landowner / proponent:	Alinta Energy
Bushfire Prone Planning commissioned to produce the BMP by:	Lina Ramlee
Purpose of the BMP:	To assess the proposal's ability to meet all relevant requirements established by State Planning Policy 3.7: Planning in Bushfire Prone Areas (SPP 3.7), the associated 'Guidelines and any relevant Position Statements; and
	To satisfy the requirement for the provision of a Bushfire Management Plan to accompany the development application.
BMP to be submitted to:	Shire of Waroona

1.2.1 Other Documents with Implications for Development of this BMP

This section identifies any known assessments, reports or plans that have been conducted and prepared previously, or are being prepared concurrently, and are relevant to the planned proposal for the subject. They potentially have implications for the assessment of bushfire threats and the identification and implementation of the protection measures that are established by this Bushfire Management Plan.

Table 1.4: Other relevant documents that may influence threat assessments and development of protection measures.

RELEVANT DOCUMENTS							
Document	Relevant	Currently Exists	To Be Developed	Copy Provided by Proponent / Developer	Title		
Structure Plan	No	N/A	No	N/A	-		
Bushfire Management Plan	Yes	Yes	No	N/A	240131 – BESS Alinta Wagerup (BMP) v1.0		
Implications for this BMP: None	e						
Bushfire Emergency Plan or Information	No	N/A	No	N/A	-		
Bushfire Risk Assessment and Management Report	Yes	No	Yes	N/A	-		
and/or offsite ignition, asset d	Implications for the BMP: The Bushfire Risk Report identifies the appropriate measures to reduce the risk of onsite and/or offsite ignition, asset damage, and harm to persons, environment, and community. The Bushfire Consultant recommends that a Bushfire Risk Report be produced to accompany this bushfire Management Plan.						
Environmental Asset or Vegetation Survey	No	N/A	No	N/A	-		
Landscaping and Revegetation Plan	No	N/A	No	N/A	-		
Land Management Agreement	No	N/A	No	N/A	-		



2 BUSHFIRE PRONE VEGETATION – ENVIRONMENTAL & ASSESSMENT CONSIDERATIONS

2.1 Environmental Considerations – 'Desktop' Assessment

This 'desktop' assessment must not be considered as a replacement for a full Environmental Impact Assessment. It is a summary of potential environmental values at the subject site, inferred from information contained in listed datasets and/or reports, which are only current to the date of last modification.

These data sources must be considered indicative where the subject site has not previously received a sitespecific environmental assessment by an appropriate professional.

Many bushfire prone areas also have high biodiversity values. Consideration of environmental priorities within the boundaries of the land being developed can avoid excessive or unnecessary modification or clearing of vegetation. Approval processes (and exemptions) apply at both Commonwealth and State levels.

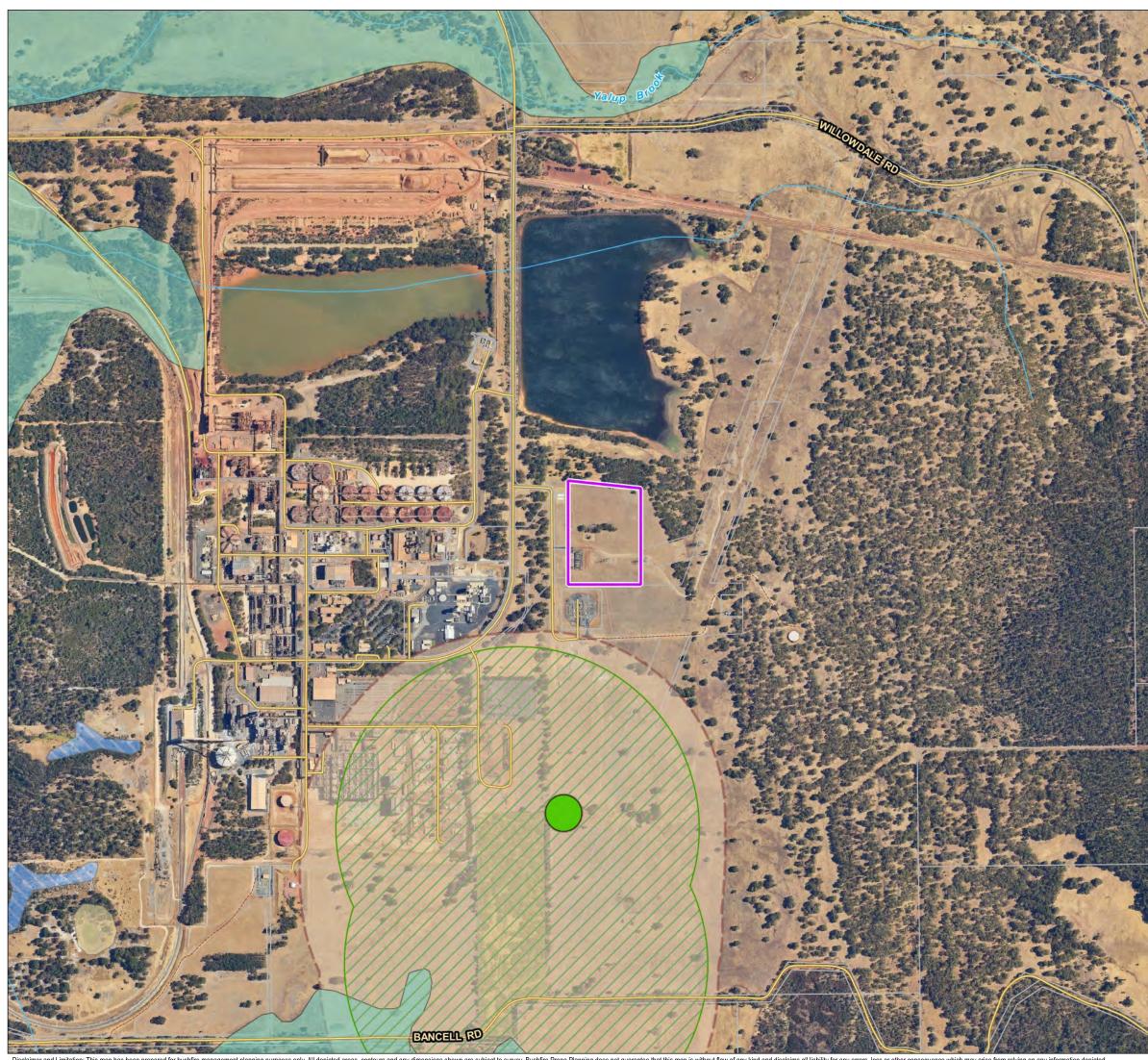
Any 'modification' or 'clearing' of vegetation to reduce bushfire risk is considered 'clearing' under the *Environmental Protection Act 1986* (EP Act) and requires a clearing permit under the *Environmental Protection* (*Clearing of Native Vegetation*) *Regulations 2004* (Clearing Regulations) – unless for an exempt purpose.

Clearing native vegetation is an offence, unless done under a clearing permit or the clearing is for an exempt purpose. Exemptions are contained in the EP Act or are prescribed in the Clearing Regulations (note: these do not apply in environmentally sensitive areas).

The **Department of Water and Environmental Regulation** (DWER) is responsible for issuing 'clearing' permits and the framework for the regulation of clearing. Approvals under other legislation, from other agencies, may also be required, dependent on the type of flora or fauna present.

Local Planning Policy or Local Biodiversity Strategy: Natural areas that are not protected by the above Act and Regulation (or any other National or State Acts) may be protected by a local planning policy or local biodiversity strategy. Permission from the local government will be required for any modification or removal of native vegetation in these Local Natural Areas (LNA's). Refer to the relevant local government for detail.

For further Information refer to Guidelines v1.4, the Bushfire and Vegetation Factsheet - WAPC, Dec 2021 and <u>https://www.der.wa.gov.au/our-work/clearing-permits</u>



Disclaimer and Limitation: This map has been prepared for bushfire management planning purposes only. All depicted areas, contours and any information depicted.

Figure 2.1 Environmental **Considerations Map** Lot 702 on Plan 059305, Area: 5.5057ha 184 Willowdale Road WAGERUP

SHIRE OF WAROONA

----- LEGEND -----



Subject Site Cadastral Clearing Regulations Reserves

Environmentally Sensitive Areas Threatened Ecological Community Declared Rare Fauna and Threatened Ecological Community

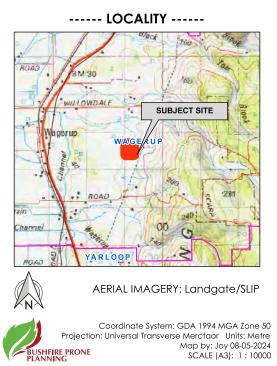
Geomorphic Wetlands



Palusplain

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Metres





2.1.1 Declared Environmentally Sensitive Areas (ESA)

IDENTIFICATION OF RELEVANT ENVIRONMENTALLY SENSITIVE AREAS								
		Influence on Bushfire Threat		Informa Identifica				
ESA Class	Relevant to Proposal	Levels and / or Application of Bushfire Protection Measures	Relevant Dataset	Dataset	Landowner or Developer	Environmental Asset or Vegetation Survey	Further Action Required	
Wetlands and their 50m Buffer (Ramsar, conservation category and nationally important)	Yes	No	DBCA-010 and 011, 019, 040, 043, 044	\boxtimes			None	
Bush Forever	No	No	DPLH-022, SPP 2.8	\boxtimes			None	
Threatened and Priority Flora + 50m Continuous Buffer	Unlikely	No	DBCA-036	Restricted Scale of Data			Confirm with relevant agency	
Threatened Ecological Community	Likely	No	DBCA-038	Available (security)			Confirm with relevant agency	
Heritage Areas National / World	No	No	Relevant register or mapping	\boxtimes			None	
Environmental Protection (Western Swamp Tortoise) Policy 2002	No	No	DWER-062	\boxtimes			None	

DESCRIPTION OF THE IDENTIFIED ENVIRONMENTALLY SENSITIVE AREAS:

Further consultation with relevant authority may be required regarding accurate accounts of threatened and priority flora as well as threatened ecological communities within the site as this data has restricted access. As shown in Figure 2.1 of this report, threatened ecological communities, and declared rare fauna are present to the south of the development, however, this should be confirmed by the proponent with the relevant authorities. The presence of threatened ecological communities, and declared rare fauna, does not have an impact on the implementation of bushfire protection measures.



2.1.2 Other Protected Vegetation on Public Land

	IDENTIFICATION OF PROTECTED VEGETATION ON PUBLIC LAND									
Land with Environmental, Biodiversity, Conservation and Social Values		Influence on Bushfire		Inform Identifico						
	Relevant to Proposal	Threat Levels and / or Application of Bushfire Protection Measures	Relevant Dataset	Dataset	Landowner or Developer	Environmental Asset or Vegetation Survey	Further Action Required			
Legislated Lands (tenure includes national park/reserve, conservation park, crown reserve and state forest)	Yes	No	DBCA-011	×			None			
Conservation Covenants	Unlikely	Unlikely	DPIRD-023	Only Available to Govt.			Data not available - confirm with relevant agency			
National World Heritage Areas	No	No	-	\boxtimes			None			
Designated Public Open Space	No	No	-		\boxtimes		None			

DESCRIPTION OF THE IDENTIFIED AREA(S) OF VEGETATION

Proponent may require further consultation with relevant authorities to obtain specific site information regarding Conservation Covenants within the site.



2.1.3 Response of Proposed Development to Identified Environmental Limitations

Consideration of the implications that identified protected areas of vegetation (i.e., those with environmental and subject to conservation) have for the proposed development.

PROPOSED DEVELOPMENT RESPONSE TO IDENTIFIED 'PROTECTED' VEGETAT	ION
The existence of 'protected' areas of vegetation has implications for the ability of the proposed development to reduce potential bushfire impact through modification or removal of vegetation.	No
Application of Design and/or Construction Responses to Limit Vegetation Modification	ion or Removal
Modify the development location to reduce exposure by increasing separation distance.	N/A
Redesign development, structure plan or subdivision.	N/A
Reduction of lot yield where this can increase available separation distances.	N/A
Cluster development to limit modification or removal of vegetation.	N/A
Construct building(s) to the requirements corresponding to higher BAL ratings to reduce required separation distances.	N/A



2.2 Bushfire Assessment Considerations

2.2.1 Planned Onsite Vegetation Landscaping

Identification of areas of the subject site planned to be landscaped, creating the potential for increased or decreased bushfire hazard for proposed development.

PLANNED LANDSCAPING	
Relevant to Proposal:	No

2.2.2 Planned / Potential Offsite Rehabilitation or Re-Vegetation

Identification of areas of land adjacent to the subject site on which re-vegetation (as distinct from natural regeneration) will or may occur and is likely to present a greater bushfire hazard for proposed development.

		POTENTIAL RE-VEGETATION PROGRAMS
Land with Environmental, Biodiversity, Conservation and Social Values	Relevant to Proposal	Description
Riparian Zones / Foreshore Areas	No	
Wetland Buffers	No	
Legislated Lands	No	N/A
Public Open Space	No	
Road Verges	No	
Other	No	



2.2.3 Identified Requirement to Manage, Modify or Remove Onsite or Offsite Vegetation

Identification of native vegetation subject to management, modification or removal.

REQUIREMENT TO MANAGE, MODIFY OR REMOVE NATIVE VEGETATION	
Has a requirement been identified to manage, modify or remove <u>onsite</u> native vegetation to establish the required bushfire protection measures on the subject site?	Yes
Figure 3.1 and 3.1.1 indicate the required vegetation management for the development.	
Is approval, from relevant state government agencies and/or the local government, to modify or remove onsite native vegetation required? (Note: if 'Yes' evidence of its existence should be provided in this BMP).	No
Only grassland vegetation requires management. This will not require local government approvals.	
Has a requirement been identified to manage, modify or remove offsite native vegetation to establish the required bushfire protection measures on the subject site?	No
Is written approval required, from relevant state government agencies and/or the local government, that permits the landowner, or another identified party, to modify or remove <u>offsite</u> bushfire prone vegetation and/or conduct other works, to establish an identified bushfire protection measure(s)?	No
If 'Yes', appropriate evidence of the approval or how it is to be established, shall be provided in this BMP as an addendum.	
Is a written management agreement required that states the obligation of the landowner, or another responsible party, to manage defined areas of offsite bushfire prone vegetation, in perpetuity, to ensure the conditions of no fire fuels and/or low threat vegetation and/or vegetation managed in a minimal fuel condition, continue to be met?	Yes
If 'Yes', appropriate evidence of the agreement or how it is to be established, shall be provided in this BMP as an addendum.	
A written agreement between Alinta Energy and Alcoa gives Alinta Energy permission to manage th as indicated within this BMP.	e required land



2.2.4 Variations to Assessed Areas of Classified Vegetation to be Applied

FOR THE PROPOSED DEVELOPMENT SITUATIONS TO BE ACCOUNTED FOR IN ASSESSING THE POTENTIAL BUSHFIRE IMPACT (BAL)	
Area(s) of land will be subject to future vegetation rehabilitation or re-vegetation that will require a change to a higher threat classification of vegetation on that land to. (Note: this is not regeneration to the mature natural state which is accounted for in the 'existing state' assessment in accordance with AS 3959:2018).	No
Modification of existing area(s) of classified vegetation due to the implementation of the proposed development and/or prior to the site's occupancy or use. This modification will require a change to a lower threat classification (or exclusion from classification) for that area of vegetation.	Yes
Refer to Figure 3.1.1 'Post Development Classified Vegetation' and Appendix A1.2 for justification deto supporting the change.	ails
Complete removal of existing area(s) of classified vegetation due to the implementation of the proposed development and/or prior to the site's occupancy or use. This modification will require an exclusion from classification for that area of vegetation.	Yes
Refer to Figure 1.1 'Proposed Development Site Plan' and Figure 3.1.1 'Post Development Classified Ve	egetation'



3 BUSHFIRE ATTACK LEVEL (BAL) ASSESSMENT

BUSHFIRE ATTACK LEVELS (BAL) - UNDERSTANDING THE RESULTS

The potential transfer (flux/flow) of radiant heat from the bushfire to a receiving object is measured in kW/m². The AS 3959:2018 BAL determination methodology establishes the ranges of radiant heat flux that correspond to each bushfire attack level. These are identified as BAL-LOW, BAL-12.5, BAL-19, BAL-29, BAL-40 and BAL-FZ.

The bushfire performance requirements for certain classes of buildings are established by the Building Code of Australia (Vol. 1 & 2 of the NCC). The BAL will establish the bushfire resistant construction requirements that are to apply in accordance with AS 3959:2018 - Construction of buildings in bushfire prone areas and the NASH Standard – Steel framed construction in bushfire areas (NS 300 2021), whose solutions are deemed to satisfy the NCC bushfire performance requirements.

DETERMINED BAL RATINGS

A BAL Certificate <u>can</u> be issued for a determined BAL. A BAL can only be classed as 'determined' for an existing or future building/structure when:

- 1. It's final design and position on the lot are known and the stated separation distance from classified bushfire prone vegetation exists and can justifiably be expected to remain in perpetuity; or
- 2. It will always remain subject to the same BAL regardless of its design or position on the lot after accounting for any regulatory or enforceable building setbacks from lot boundaries as relevant and necessary (e.g., R-codes, restrictive covenants, defined building envelopes) or the retention of any existing classified vegetation either onsite or offsite.

If the BMP derives determined BAL(s), the BAL Certificate(s) required for submission with building applications can be provided, using the BMP as the assessment evidence.

INDICATIVE BAL RATINGS

A BAL Certificate <u>cannot</u> be issued for an indicative BAL. A BAL will be classed as 'indicative' for an existing or future building/structure when the required conditions to derive a determined BAL are not met.

This class of BAL rating indicates what BAL(s) could be achieved and the conditions that need to be met are stated.

Converting the indicative BAL into a determined BAL is conditional upon the currently unconfirmed variable(s) being confirmed by a subsequent assessment and evidential documentation. These variables will include the future building(s) location(s) being established (or changed) and/or classified vegetation being modified or removed to establish the necessary vegetation separation distance. This may also be dependent on receiving approval from the relevant authority for that modification/removal.

BAL RATING APPLICATION – PLANNING APPROVAL VERSUS BUILDING APPROVAL

1. Planning Approval: SPP.3.7 establishes that where BAL- LOW to BAL-29 will apply to relevant future construction (or existing structures for proposed uses), the proposed development may be considered for approval (dependent on the other requirements of the relevant policy measures being met). That is, BAL40 or BAL-FZ are not acceptable on planning grounds (except for certain limited exceptions).

Because planning is looking forward at what can be achieved, as well as looking at what may currently exist, both <u>determined</u> and <u>indicative</u> BAL ratings are acceptable assessment outcomes on which planning decisions can be made (including conditional approvals).

2. Building Approval: The Building Code of Australia (Vol. 1 & 2 of the NCC) establishes that relevant buildings in bushfire prone areas must be constructed to the bushfire resistant requirements corresponding to the BAL rating that is to apply to that building. Consequently, a <u>determined</u> BAL rating and the BAL Certificate is required for a building permit to be issued - an <u>indicative</u> BAL rating is not acceptable.



3.1 BAL Assessment Summary (Contour Map Format)

INTERPRETATION OF THE BAL CONTOUR MAP

The BAL contour map is a diagrammatic representation of the results of the bushfire attack level assessment.

The map presents different coloured contours extending out from the areas of classified vegetation. Each contour represents a set range of radiant heat flux that potentially will transfer to an exposed element (building, person or other defined element), when it is located within that contour.

Each of the set ranges of radiant heat flux corresponds to a different BAL rating as defined by the AS 3959:2018 BAL determination methodology.

The width of each shaded BAL contour will vary dependant on both the BAL rating and the relevant parameters (calculation inputs) for the subject site. Their width represents the minimum and maximum vegetation separation distances that correspond to each BAL rating (refer to the relevant table below for these distances).

The areas of classified vegetation to be considered in developing the BAL contours, are those that will remain at the intended end state of the subject development once earthworks, clearing and/or landscaping and re-vegetation have been completed. Variations to this statement that may apply include:

- Both pre and post development BAL contour maps are produced; and/or
- Each stage of a development is assessed independently.

3.1.1 BAL Determination Methodology and Location of Data and Results

LOCATION OF DATA & RESULTS									
BAL Deterr Method		Locatio	n of the Site A	Location of the Results					
		Classified	Calcula	tion Input Variables					
AS 3959:2018	Applied to Assessment	Vegetation and Topography Map(s)	Summary Data	Detailed Data with Explanatory and Supporting Information	Assessed Bushfire Attack Leve and/or Radiant Heat Levels				
Method 1 (Simplified)	Yes	Figure 3.1 Figure 3.1.1	Table 3.2	Appendix A1	Table 3.1 Table 3.3 / BAL Contour Map				



3.1.2 BAL Ratings Derived from the Contour Map

BUSHFIRE ATTACK LEVEL FOR EXISTING/PLANNED BUILDINGS/STRUCTURE 1									
Building/Structure Description Indicative BAL ² Determined BAL ²									
BESS	BAL-29	N/A							
Substation	BAL-19	N/A							
¹ The assessment data used to derive the BAL ratings is sourced from Table 3.1 and Figure 3.2 'BAL Contour Map'.									

Table 3.1: Indicative and determined BAL(s) for existing and/or proposed building works.

3.1.3 Site Assessment Data Applied to Construction of the BAL Contour Map(s)

² Refer to the start of Section 3 for an explanation of indicative versus determined BAL ratings.

RELEVANT CLASSIFIED VEGETATION								
Identification of Classified Vegetation that is Relevant to the Production of the BAL Contour Map(s)								
The relevant vegetation for the post-development BAL contour map will be any area of classified vegetation - both within the subject site (onsite) and external to the subject site (offsite) - that will remain at the intended end state of the subject development once earthworks, any clearing and/or landscaping and re-vegetation have been completed.	Figure No.3.1.1.							
 The relevant vegetation is the classified vegetation external to the lot boundaries. All identified classified vegetation areas, or portions of areas, within the subject lot are excluded. This approach is applied to indicate the achievable bushfire attack levels within the specified lot and the resultant area of developable land where buildings will be subject to BAL-29 or less. It is based on the following assumptions: Any classified vegetation within a lot can potentially be managed or removed by the landowner to meet asset protection zone standards; and Future development and consequent removal/management of vegetation that may take place on any adjoining lot cannot be part of considerations for the subject lot. 	Figure No.3.1.1.							

Continuous management within subject lot and within 10m area surrounding development lot (as per agreement between Alinta Energy and Alcoa) allows for excluded areas shown in Figure 3.1.1 of this BMP.



Table 3.2: Calculation inputs applied to deriving the vegetation separation distances corresponding to different levels of potential radiant heat transfer.

	DATA APPLIED TO CA	LCULATE TI	HE SITE SPECIFIC VEGE	TATION SEPAR	ATION DISTAN	CES CORR	ESPONDING	TO POTENTIA	L RADIANT H	IEAT TRANSFE	R LEVELS ¹	
Applie	Applied BAL Determination Method METHOD 1 - SIMPLIFIED PROCEDURE (AS 3959:2018 CLAUSE 2.2)											
		Th	e Calculation Input Vo	ariables - Corre	esponding to	the Applie	ed BAL Deter	mination Me	thod ²			
	Methods 1 and 2		Method 1					Method	12			
			Effective S	lope			Flame	Elevation	Flame	Fireline	Flame	Modified
Vegetation Classification	FDI	Applied Range	Measured	Site Slope FFDI	FFDI or	Temp.	of Receiver	Width	Intensity	Length	View Factor	
Area	Class		degree range	degrees	degrees	GFDI	К	metres	metres	kW/m	metres	% Reduction
1	(A) Forest	80	Downslope >0-5	d/slope 3	-	-	-	-	-	-	-	-
2	(A) Forest	80	Downslope >5-10	d/slope 9	-	-	-	-	-	-	-	-
3	(A) Forest	80	Upslope or flat 0	Upslope	-	-	-	-	-	-	-	-
4	(A) Forest	80	Upslope or flat 0	flat 0	-	-	-	-	-	-	-	-
5	(G) Grassland	80	Downslope >0-5	d/slope 3	-	-	-	-	-	-	-	-
6	(G) Grassland	80	Downslope >5-10	d/slope 9	-	-	-	-	-	-	-	-
7	(G) Grassland	80	Upslope or flat 0	flat 0	-	-	-	-	-	-	-	-
8	Excluded cl 2.2.3.2(e)	N/A	N/A	-	-	-	-	-	-	-	-	-

Note 1: The values used to indicate levels of potential radiant heat transfer (from fire in bushfire prone vegetation to exposed elements at risk), will be stated in subsequent tables as either as a bushfire attack level (BAL) and/or as kilowatts per square metre (kW/m2), as relevant to the application of the value and the type and use of the element at risk.

Note 2: All data and information supporting the determination of the classifications and values stated in this table is presented in Appendix A. Where the values are stated as 'default' these are either the values stated in AS 3959:2018, Table B1 or the values calculated as intermediate or final outputs through application of the equations of the AS 3959:2018 BAL determination methodology. They are not values derived by the assessor.



Table 3.3: Vegetation separation distances corresponding to the stated levels of potential radiant heat transfer.

THE CALCULATED (SITE SPECIFIC) VEGETATION SEPARATION DISTANCES CORRESPONDING TO THE STATED LEVEL OF POTENTIAL RADIANT HEAT TRANSFER (METRES) 1									
	Maximum Radiant Heat Transfer (Flux)								
Vegetation Classification		>40 kW/m ²	40 kW/m ²	29 kW/m ²	19 kW/m²	12.5 kW/m ²	N/A ²		
				Bushfire At	tack Levels			10 kW/m ²	2 kW/m ²
Area	Class	BAL-FZ	BAL-40	BAL-29	BAL-19	BAL12.5	BAL-LOW		
1	(A) Forest	<20	20-<27	27-<37	37-<50	50-<100	>100	-	-
2	(A) Forest	<26	26-<33	33-<46	46-<61	61-<100	>100	-	-
3	(A) Forest	<16	16-<21	21-<31	31-<42	42-<100	>100	-	-
4	(A) Forest	<16	16-<21	21-<31	31-<42	42-<100	>100	-	-
5	(G) Grassland	<7	7-<9	9-<14	14-<20	20-<50	>50	-	-
6	(G) Grassland	<8	8-<10	10-<16	16-<23	23-<50	>50	-	-
7	(G) Grassland	<6	6-<8	8-<12	12-<17	17-<50	>50	-	-
8	Excluded cl 2.2.3.2(e)	-	-	-	-	-	-	-	-

Note 1: The calculated results are illustrated in Figure 3.2 as a BAL Contour Map and/ or additional defining lines as necessary. All applied calculation input variables are presented in Table 3.2. A copy of the radiant heat calculator output for each area of classified vegetation is presented in Appendix A3.

Note 2: The BAL-LOW rating does not represent a maximum level of radiant heat transfer. The rating is applied when the separation distance is at least 100m from all classified vegetation except Grassland, for which 50m applies.



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Figure 3.1 **Classified Vegetation &** Topography (Existing)

Lot 702 on Plan 059305, Area: 5.5057ha 184 Willowdale Road WAGERUP SHIRE OF WAROONA

----- LEGEND -----

Subject Site

Cadastral Photo and Direction 150m Assessment Area

100m Assessment Area

Classified Vegetation



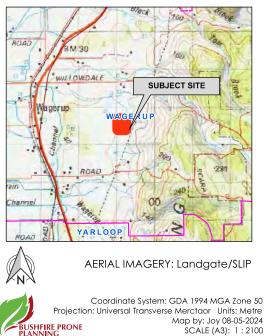
Lot layout

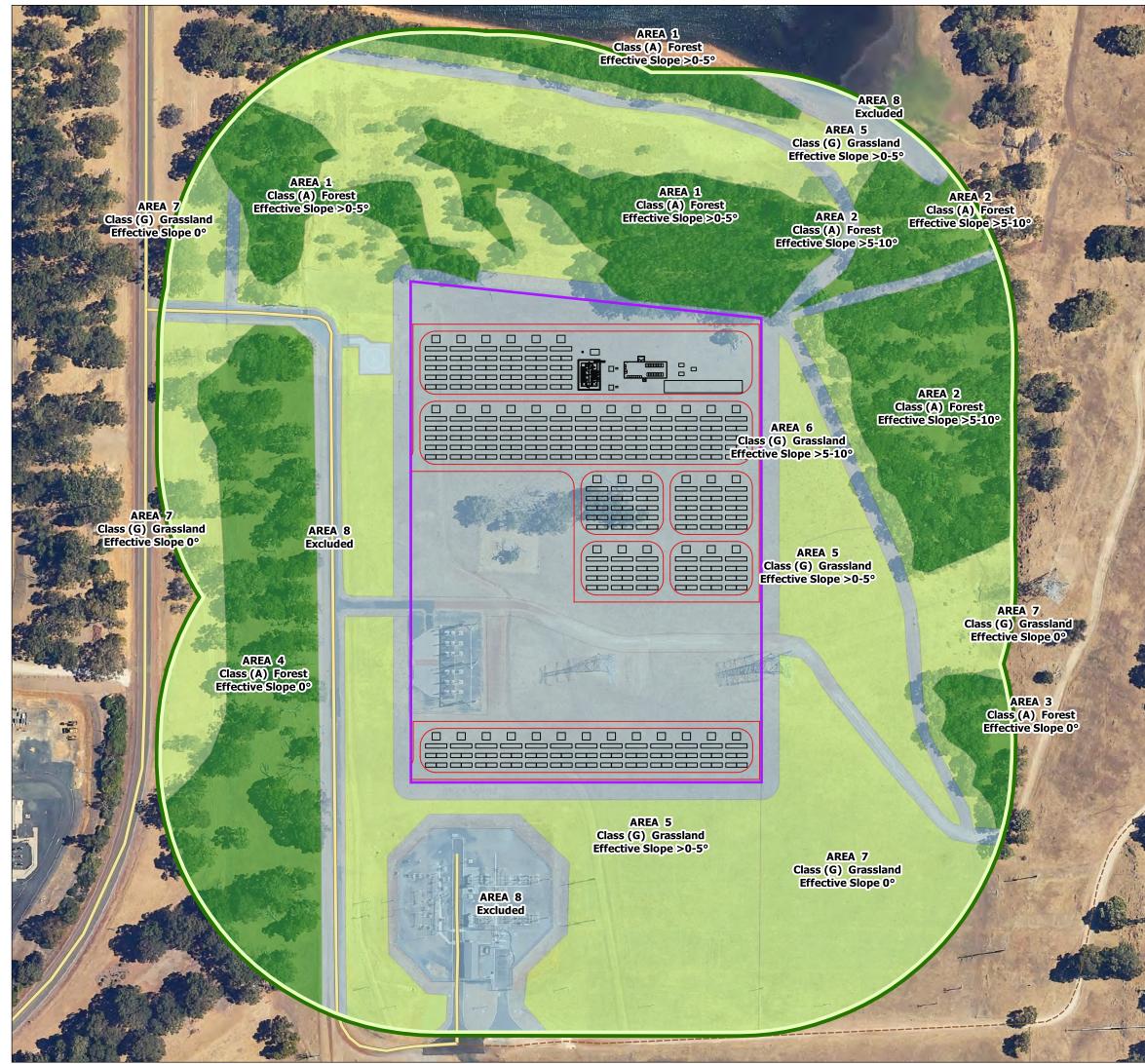
– Infrastructure Road



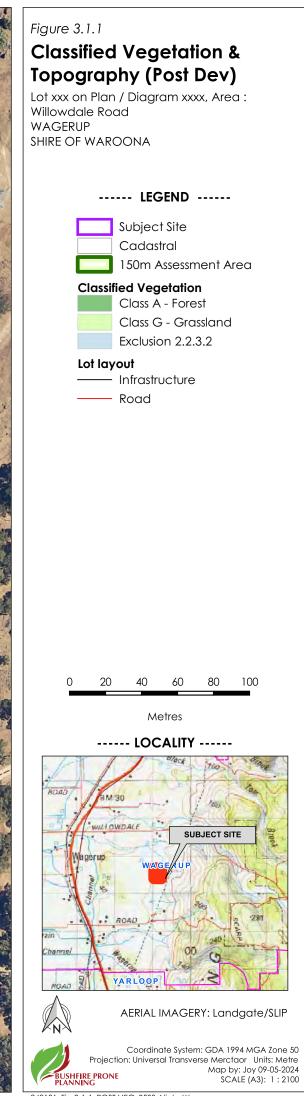
Metres



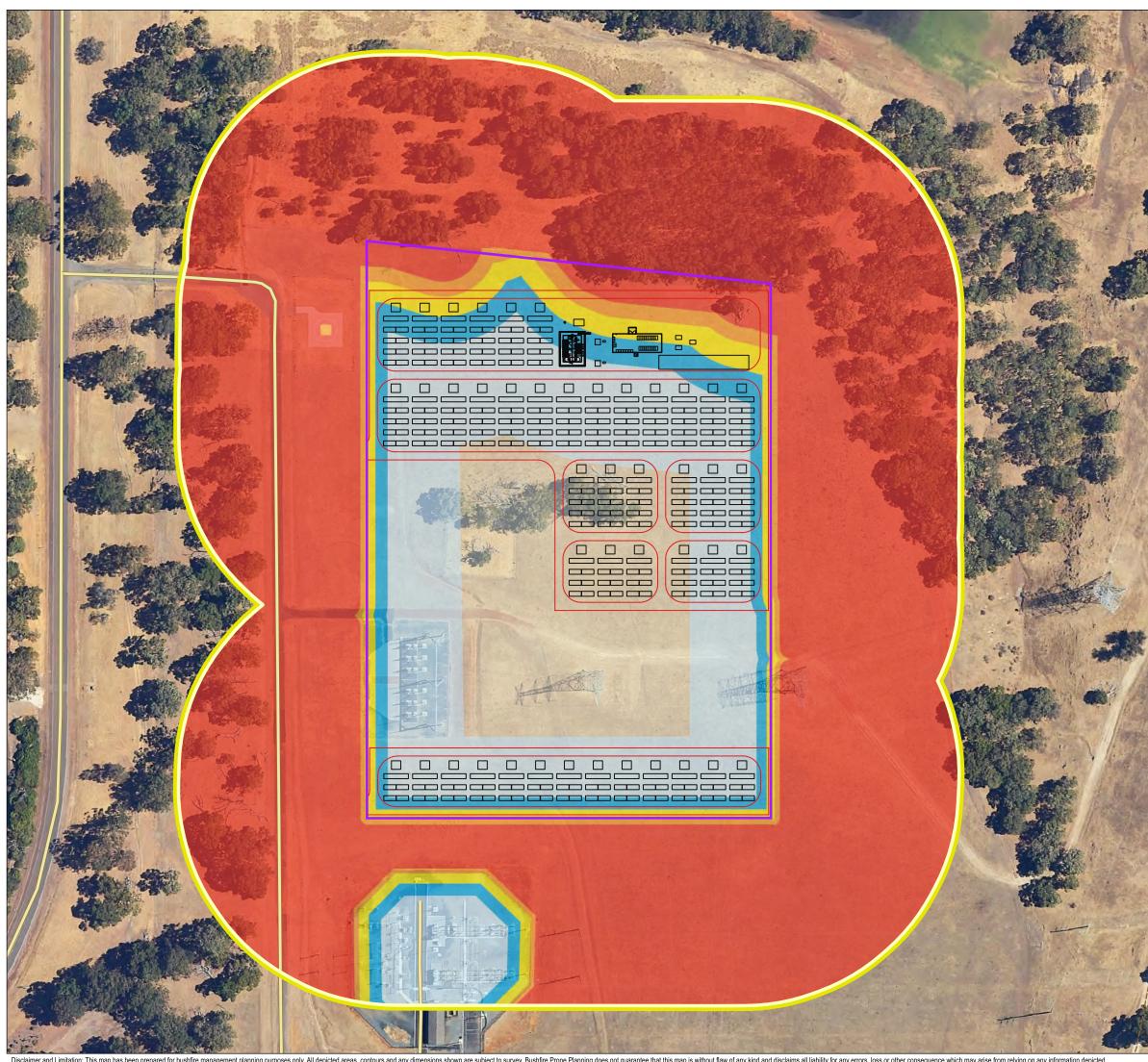




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240131_Fig 3-1-1_POST VEG_BESS Alinta Wagerup.qgz



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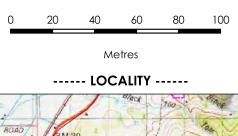
Lot xxx on Plan / Diagram xxxx, Area : Willowdale Road WAGERUP SHIRE OF WAROONA

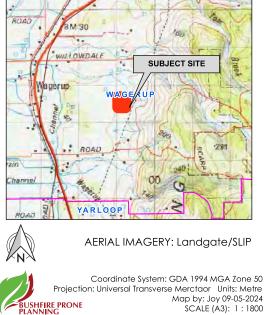
----- LEGEND ------



Bushfire Attack Levels

BAL-FZ
BAL-40
BAL-29
BAL-19
BAL-12.5
BAL-LOW







4 IDENTIFICATION OF BUSHFIRE HAZARD ISSUES

The Guidelines for Planning in Bushfire Prone Areas (WAPC 2021 v1.4), Appendix 5, establish that the application of this section of the BMP is intended to support <u>strategic planning</u> proposals. At the strategic planning stage there will typically be insufficient proposed development detail to enable all required assessments, including the assessment against the bushfire protection criteria.

Strategic Planning Proposals

For strategic planning proposals this section of the BMP will identify:

- Issues associated with the level of the threats presented by any identified bushfire hazard;
- Issues associated with the ability to implement sufficient and effective bushfire protection measures to
 reduce the exposure and vulnerability levels (of elements exposed to the hazard threats), to a tolerable or
 acceptable level; and
- Issues that will need to be considered at subsequent planning stages.

All Other Planning Proposals

For all other planning stages, this BMP will address what are effectively the same relevant issues but do it within the following sections:

- Section 2 Bushfire Prone Vegetation Environmental and Assessment Considerations: Assess environmental, biodiversity and conservation values;
- Section 3 Potential Bushfire Impact: Assess the bushfire threats with the focus on flame contact and radiant heat; and
- Section 5 Assessment Against the Bushfire Protection Criteria (including the guidance provided by the Position Statement: 'Planning in bushfire prone areas Demonstrating Element 1: Location and Element 2'): Assess the ability of the proposed development to apply the required bushfire protection measures thereby enabling it to be considered for planning approval for these factors.

Is the proposed development a strategic planning proposal?

No



5 ASSESSMENT AGAINST THE BUSHFIRE PROTECTION CRITERIA (GUIDELINES V1.4)

5.1 Bushfire Protection Criteria Elements Applicable to the Proposed Development/Use

APPLICATION OF THE CRITERIA, ACCEPTABLE SOLUTIONS AND PERFORMANCE ASSESSMENT

The criteria are divided into five elements – location, siting and design, vehicular access, water and vulnerable tourism land uses. Each element has an intent outlining the desired outcome for the element and reflects identified planning and policy requirements in respect of each issue.

The example acceptable solutions (bushfire protection measures) provide one way of meeting the element's intent. Compliance with these automatically achieves the element's intent and provides a straightforward pathway for assessment and approval.

Where the acceptable solutions cannot be met, the ability to develop design responses (as alternative solutions that meet bushfire performance requirements) is an alternative pathway that is provided by addressing the applicable performance principles (as general statements of how best to achieve the intent of the element).

A merit based assessment is established by the SPP 3.7 and the Guidelines as an additional alternative pathway along with the ability of using discretion in making approval decisions (sections 2.5, 2.6 and 2.7). This is formally applied to certain development (minor and unavoidable – sections 5.4.1 and 5.7). Relevant decisions by the State Administrative Tribunal have also supported this approach more generally.

Elements 1 - 4 should be applied for all strategic planning proposals, subdivision or development applications, except for vulnerable tourism land uses which should refer to Element 5. Element 5 incorporates the bushfire protection criteria in Elements 1 - 4 but caters them specifically to tourism land uses. (Guidelines DPLH 2021v1.4)

The Bushfire Protection Criteria	Applicable to the Proposed Development/Use
Element 1: Location	Yes
Element 2: Siting and Design	Yes
Element 3: Vehicular Access	Yes
Element 4: Water	Yes
Element 5: Vulnerable Tourism Land Uses	No

5.2 Local Government Variations to Apply

Local governments may add to or modify the acceptable solutions to recognise special local or regional circumstances (e.g., topography / vegetation / climate). These are to be endorsed by both the WAPC and DFES before they can be considered in planning assessments. (Guidelines DPLH 2021v1.4).

Do endorsed regional or local variations to the acceptable solutions apply to the assessments	No
against the Bushfire Protection Criteria for the proposed development /use?	INO



5.3 Assessment Statements for Element 1: Location

LOCATION								
Element Intent	To ensure that strategic planning proposals, subdivision and development applications are located in areas with the least possible risk of bushfire to facilitate the protection of people, property and infrastructure.							
Proposed Developm Relevant Planning St		(Do) Development applica dwelling or minor developr		n for a singl	e dwelling, ancil	lary		
Element Compliance	e Statement	The proposed developmer fully compliant with all app				being		
Pathway Applied to Alternative Solution	Provide an	N/A						
All details of acceptable solution requirements are established in the Guidelines for Planning in Bushfire Prone Areas, DPLH v1.4 (Guidelines) and apply the guidance established by the Position Statement: 'Planning in bushfire prone areas – Demonstrating Element 1: Location and Element 2: Siting and design' (WAPC Nov 2019) and the 'Bushfire Management Plan Guidance for the Dampier Peninsula' (WA Department of Planning, Lands and Heritage, 2021 Rev B) as relevant. These documents are available at https://www.wa.gov.au/government/document-collections/state-planning-policy-37-planning-bushfire-prone-areas.								
Solution Component		nd ☑ Relevant & met	🗵 Relevar	nt & not me	t O Not rele	Yes		
A1.1 Development lo	ocation		Applicable:	Yes	Compliant:	Yes		
		AINST THE REQUIREMENTS ES						
		tion is located in an area th nazard level, or BAL-29 or be		n completio	on, be subject to	either a		
Supporting Assessme All elements of the p		cture are located within an o	area subject to) BAL-29.				
ASSESSMENTS AP	PLYING THE GUID	ANCE ESTABLISHED BY THE W	APC ELEMENT 1	& 2 POSITI	ON STATEMENT (2	2019)		
"Consideration should be given to the site context where 'area' is the land both within and adjoining the subject site. The hazards remaining within the site should not be considered in isolation of the hazards adjoining the site, as the potential impact of a bushfire will be dependent on the wider risk context, including how a bushfire could affect the site and the conditions for a bushfire to occur within the site." Strategic Planning Proposals: Consider the threat levels from any vegetation <u>adjoining</u> and <u>within</u> the subject site for which the potential intensity of a bushfire in that vegetation would result in it being classified as an Extreme Bushfire Hazard Level (BHL). Identify any proposed design strategies to reduce these threats. Structure Plans (lot layout known) and Subdivision Applications: As for strategic planning proposals but <u>within</u> the subject site the relevant threat levels to consider are the radiant heat levels represented by BAL-FZ and BAL-40 ratings.								
The planning propos applicable to the Ele		ent application, consequent nt.	ly the referenc	ed positior	n statement is no	t		



5.4 Assessment Statements for Element 2: Siting and Design

		SITING AND DE	SIGN OF DEVELOPMENT						
Element Intent	ent Intent To ensure that the siting and design of development minimises the level of bushfire impact. (BPP Note: not building/construction design)								
Proposed Development/Use – (Do) Development application other than for a single dwelling, ancillary dwelling minor development									
Element Comp Statement	bliance		ment/use achieves the int licable acceptable solutio		element by bei	ing fully			
Pathway Applied to Provide an Alternative Solution N/A									
(Guidelines) and Element 1: Locc Dampier Peninsu https://www.wa	d apply the guida Ition and Element Jla' (WA Departm .gov.au/governme	ance established by the Po 2: Siting and design' (WA eent of Planning, Lands and <u>ent/document-collections</u>)	ned in the Guidelines for Plan osition Statement: 'Planning i PC Nov 2019) and the 'Bushf I Heritage, 2021 Rev B) as rele (state-planning-policy-37-plan	in bushfire p ire Manage evant. These nning-bushfi	prone areas – De ement Plan Guida documents are re-prone-areas.	emonstratin ance for th available c			
	oonent Check Bo Design of Develo		vant & met 🛛 Relevar	nt & not me	et O Notre Compliant:	elevant Yes			
A2.1 Asset Pro	lection Zone (AP	•Z)	Applicable:	Yes	Compliant:	Yes			
vulnerable ele threat of cons constructed, s damage or los This is achieve prone vegeta consists of no condition. The requirements.	ments at risk), to equential fires t tored or accum ss. d by separating tion. This area of vegetation and required separa	the direct bushfire threa that result from the sub nulate in the area surra buildings (and consequ f separation surrounding Id/or low threat vegeta ation distances will vary o	educe the exposure of the state of flame contact, radia sequent ignition of other bunding these structures. Use the fuels as necessing buildings is identified as the structure of the structure	nt heat an combustik This reduc ary) from a the Asset F nually ma fic conditio	ad embers and t ole materials the es the associat areas of classifie Protection Zone naged to a m ons and local ge	the indirect at may be ted risks of ed bushfir (APZ) and inimal fue overnmer			
being identified. Note: Appendix B 'Onsite Vegetation Management' provides further information									
	regarding the different APZ dimensions that can be referenced, their purpose and the specifications of the APZ that are to be established and maintained on the subject lot.								
		THE 'PLANNING I	BAL-29' APZ DIMENSIONS						
Purpose: To pro distances. To minimum sepc	ovide evidence d	of the development or us							

dimensions.



The 'Planning BAL-29' APZ is not necessari	ly the size of the APZ that must b	oe physically implemented o	and maintained
by a landowner. Rather, its sole purpose is	s to identify if an acceptable sol	lution for planning approval	can be met.

THE 'REQUIRED' APZ DIMENSIONS

be the mir	Purpose: Establishes the dimensions of the APZ to be physically implemented by the landowner on their lot: These will be the minimum required separation distances from the subject building(s) to surrounding bushfire prone vegetation (identified by type and associated ground slope). These are established by:						
	e 'BAL Rating APZ' of the subject building(s) when distances are greater than 'B' below (except when 'B' tablishes a maximum distance); or						
	e 'Local Government' APZ' derived from the Firebreak/Hazard Reduction Notice when distances are eater than 'A' above, other than when a maximum distance is established, in which case this will apply; or						
C. A	combination of 'A' and 'B'.						
	Within this Report/Plan it is the ' Planning BAL-29' APZ that will be identified on maps, diagrams and in tables as necessary – unless otherwise stated.						
	The 'Required' APZ dimension information will be presented in Appendix B1.1 and on the Property Bushfire Management Statement, when required to be included for a development application.						
	ASSESSMENT AGAINST THE REQUIREMENTS ESTABLISHED BY THE GUIDELINES						
	APZ Width: The proposed (or a future) habitable building(s) on the lot(s) of the proposed development - or an existing building for a proposed change of use – can be (or is) located within the developable portion of the lot and be surrounded by a 'Planning BAL-29' APZ of the required dimensions (measured from any external wall or supporting post or column to the edge of the classified vegetation), that will ensure their exposure to the potential radiant heat impact of a bushfire does not exceed 29 kW/m ² .						
	 Restriction on Building Location: It has been identified that the current developable portion of a lot(s) provides for the proposed future (or a future) building/structure location that will result in that building/structure being subject to a BAL-40 or BAL-FZ rating. Consequently, it may be considered necessary to impose the condition that a restrictive covenant to the benefit of the local government pursuant to section 129BA of the Transfer of Land Act 1893, is to be placed on the certificate(s) of title of the proposed lot(s) advising of the existence of a restriction on the use of that portion of land (refer to Code F3 of Model Subdivision Conditions Schedule, WAPC June 2021 and Guidelines s5.3.2). 						
	APZ Location: The required dimensions for a 'Planning BAL-29' APZ can be contained solely within the boundaries of the lot(s) on which the proposed (or a future) habitable building(s) - or an existing building(s) for a proposed change of use – is situated.						
	APZ Location: The required dimensions for a 'Planning BAL-29' APZ can be partly established within the boundaries of the lot(s) on which the proposed (or a future) habitable building(s) - or an existing building(s) for a proposed change of use – is situated. The balance of the APZ would exist on adjoining land that satisfies the exclusion requirements of AS 3959:2018 cl 2.2.3.2 for non-vegetated areas and/or low threat vegetation and/or vegetation managed in a minimal fuel condition.						
	APZ Location: It can be justified that any adjoining (offsite) land forming part of a 'Planning BAL-29' APZ will:						
	 If non-vegetated, remain in this condition in perpetuity; and/or If vegetated, be low threat vegetation or vegetation managed in a minimal fuel condition in perpetuity. 						



	APZ Management: The area of land (within each lot boundary), that is to make up the required 'Landowner' APZ dimensions (refer to Appendix B, Part B1), can and will be managed in accordance with the requirements of the Guidelines Schedule 1 'Standards for Asset Protection Zones' (refer to Appendix B).
	Staged Subdivision: The subdivision proposes development in stages and each stage is to comply with the relevant bushfire protection criteria.
	A balance lot is created or classified vegetation within a subsequent stage will be removed and/or modified and/or be subject to ongoing management, to ensure that proposed lots within the current stage of the subdivision achieve a development site subject to 29 kW/m ² or below.
	The planned approach for achieving the required outcome is described in the supporting assessment details below.
	Firebreak/Hazard Reduction Notice: Any additional requirements established by the relevant local government's annual notice to install firebreaks and manage fuel loads (issued under s33 of the Bushfires Act 1954), can and will be complied with.
Supporting	Assessment Details:
infrastructu be put in p	ty of the developable lot will be managed to a low threat state with the development of the proposed ure. A portion of the 'Planning BAL-29' APZ is outside of the lot boundary. A written agreement will need to olace between Alinta Energy and Alcoa, providing permission for Alinta Energy to manage in perpetuity urrounding the lot boundary a low threat state. The required distance will be per the required APZ, to a of 10m.
	tion recommended to be subject to no greater than 19kW/m2 radiant heat flux (BAL-19). This is established 5.7 and shown in Figure 3.2.
mineral ec technical specificati	diate 10m portion of the APZ around BESS cabinets will be entirely non-vegetated (sealed, developed, or arth), to the extent of the lot boundary. The balance of the APZ will be managed in accordance with the requirements established by the Schedule 1: 'Standards for Asset Protection Zones (Guidelines). The APZ ons are also detailed in Appendix B and the Shire of Waroona may have additional requirements d by their Firebreak Notice.
	e high-risk nature of the development, the supplier/manufacturer of the BESS product, or appropriate fire or similar, is to provide specifications as outlined in Section 5.7.
ASSESS	SMENTS APPLYING THE GUIDANCE ESTABLISHED BY THE WAPC ELEMENT 1 & 2 POSITION STATEMENT (2019)
-	Ianning Proposals: "At this planning level there may not be enough detail to demonstrate compliance with nt. The decision-maker may consider this element is satisfied where A1.1 is met."
	Plans (lot layout known) and Subdivision Applications: "Provided that Element 1 is satisfied, the decision- y consider approving lot(s) containing BAL-40 or BAL-FZ under the following scenarios.
	ng proposal is a development application, consequently the referenced position statement is not to the proposed development.



5.5 Assessment Statements for Element 3: Vehicular Access

			VEHICULAR ACCES	5							
Element In	tent		o ensure that the vehicular access serving a subdivision/development is available and safe uring a bushfire event.								
Proposed I Relevant P		pment/Use – g Stage	(Do) Development applicati dwelling or minor developme		r a single	dwelling, anc	illary				
Element Co	omplic	unce Statement		The proposed development/use achieves the intent of this element by being fully compliant with all applicable acceptable solutions.							
Pathway Applied to Provide an Alternative Solution			N/A								
		Ac	ceptable Solutions - Assessme	ent Statements							
All details of acceptable solution requirements are established in the Guidelines for Planning in Bushfire Prone Areas, DPLH v1.4 (Guidelines) and apply the guidance established by the Position Statement: 'Planning in bushfire prone areas – Demonstrating Element 1: Location and Element 2: Siting and design' (WAPC Nov 2019) and the 'Bushfire Management Plan Guidance for the Dampier Peninsula' (WA Department of Planning, Lands and Heritage, 2021 Rev B) as relevant. These documents are available at https://www.wa.gov.au/government/document-collections/state-planning-policy-37-planning-bushfire-prone-areas. The technical construction requirements for access types and components, and for each firefighting water supply component, are also presented in Appendices C and D. The local government will advise the proponent where different requirements are to apply and when any additional specifications such as those for signage and gates are to apply (these are included in the relevant appendix if requested by the local government).											
Solution Co	ompor	nent Check Box Lege	nd 🗹 Relevant & met	Relevant & met	not	Ø Not rele	evant				
E3 Vehicul	ar Acc	ess				Compliant:	Yes				
A3.1 Public	: road	5		Applicable:	No	Compliant:	Yes				
			requirements of vertical clec with (Refer also to Appendix (-	ht capac	city (Guideline	s, Table 6)				
All other applicable technical requirements of trafficable width, gradients and curves, are required to be in "accordance with the class of road as specified in the IPWEA Subdivision Guidelines, Liveable Neighbourhoods, Ausroad Standards and/or any applicable standard in the local government area" (Guidelines, Table 6 and E3.1. Refer also to Appendix C in this BMP). The assessment conducted for the bushfire management plan indicates that it is likely that the proposed development can and will comply with the requirements. However, the applicable class of road, the associated technical requirements and subsequent proposal compliance, will need to be confirmed with the relevant local government and/or Main Roads WA.											
	A trav	versable verge is avai	lable adjacent to classified v	egetation (Guide	elines, E3.	1), as recomn	nended.				
The Guide	ines v		eration of Private Roads. e roads and A3.1 is technico	ally not applicab	ole, as the	ere is no publ	ic road to				

comply with minimum technical requirements.



However, the primary access road for Alcoa is entirely continuous with Willowdale Road, and is of identical surface, grading, and clearance. Willowdale road is very likely to meet the standards for the applicable class of road, and therefore the private road access will also be of an appropriate standard. The access leg to the subject Lot is constructed to a lower standard, as it only accesses the unstaffed Western Power and Alinta Energy sites. The access leg is considered to be a no-through road rather than a private driveway for the purposes of this assessment.										
	Additionally, the Local Government (Shire of Waroona) is listed as the custodian of the private roads. A bushfire consultant cannot confirm if a road meets the relevant standard.									
A3.2a Mult	tiple acces	s routes			Ар	plicable:	Yes	Compliant:	Yes	
			oublic road ac h an all-weath		ed in two c	different di	rections	to at least two	o different	
		vay access <u>is</u> o via a no-throu	available at ar gh road.	n intersection	no greater	than 200r	n from tr	ne relevant bo	oundary of	
	lot. Howe		<u>not</u> available o Ible no-througl rements are:						-	
	• Tł • Tł w	he no-through he balance of vithin a resider	of no alternati road travels to the no-throug ntial built-out o vegetation tho	owards a suitc gh road that is area or is pot	able destinc s greater th entially sub	ation; and an 200m f ject to rac	diant he	at levels from		
	Assessme cess road is		access leg fro	m the bound	ary of the su	ubject Lot	to the in	tersection of th	ne primary	
As above,	the Guidel	lines do not co	onsider Private	Roads. From	the Guidelir	nes A3.2a:				
If the public road access to the subject site is via a no-through road which cannot be avoided due to demonstrated site constraints, the road access is to be a maximum of 200 metres from the subject lot(s) boundary to an intersection where two-way access is provided.										
The above	e requireme	ent is technica	lly met, as							
		-	dale Road) is v			ne access	leg)			
	•		kists within the l	•	.ot.					
			ess leg) is less th d (at the Alco		d).					
The Alcoa access road reaches Willowdale Road to the north, providing two directions of continuous travel (including via South Western Highway).										
To the south, the access road leads to Alcoa Wagerup. This is a large, low threat area that can be accessed via a public car park. This is a 'suitable destination.'										
A3.2b Eme	ergency ac	cess way			Ар	plicable:	No	Compliant:	N/A	
	The propo	osed or existing	g EAW provide	s a through c	onnection t	o a public	road.			



	The proposed or existing EAW is less than 500m in length and will be sig unlocked) to the specifications stated in the Guidelines and/or required by									
	The technical construction requirements for widths, clearances, co (Guidelines, Table 6 and E3.2b. Refer also to Appendix C in this BMP), car									
	 The subdivision proposes development in stages and each stage is to comply with the relevant bushfire protection criteria. A temporary EAW is planned to facilitate the staging arrangements of a subdivision as an interim second access route until the required second access route is constructed as a public road in a subsequent stage. The planned approach for achieving the required outcome is described in the supporting assessment details below. 									
Supporting	Assessment Details: ired.									
A3.3 Throu	gh-roads Applicable:	No	Compliant:	N/A						
	A no-through public road is necessary as no alternative road layout exist	s due to :	site constraints							
	The no-through public road length does not exceed the established maximum of 200m to an intersection providing two-way access (Guidelines, E3.3).									
	The no-through public road exceeds 200m but satisfies the exemption provisions of A3.2a as demonstrated in A3.2a above.									
	The public road technical construction requirements (Guidelines, Table 6 C in this BMP), can and will be complied with as established in A3.1 abov		. Refer also to A	Appendix						
	The turnaround area requirements (Guidelines, Figure 24) can and will be	e complie	ed with.							
Supporting None requ	Assessment Details: ired.									
A3.4a Peri	neter roads Applicable:	No	Compliant:	N/A						
	The proposed greenfield or infill development consists of 10 or more lots a staged subdivision) and therefore should have a perimeter road. This is	-	-	-						
	 The proposed greenfield or infill development consists of 10 or more lots (including those that are part of a staged subdivision). However, it is not required on the established basis of: The vegetation adjoining the proposed lots is classified Class G Grassland; Lots are zoned rural living or equivalent; It is demonstrated that it cannot be provided due to site constraints; or All lots have existing frontage to a public road. 									
	The technical construction requirements of widths, clearances, co (Guidelines, Table 6 and E3.4a) can and will be complied with.	apacity,	gradients and	d curves						



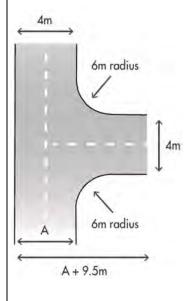
Supporting None requ	Assessment Details: ired.												
A3.4b Fire	service access route	Applicable:	No	Compliant:	N/A								
	The FSAR can be installed as a through-route with no deac 500m and is no further than 500m from a public road.	d ends, linked t	o the inte	ernal road sys	tem every								
	$\Box \Box \otimes$ The technical construction requirements of widths, clearances, capacity, gradients and curves (Guidelines, Table 6 and E3.4b. Refer also to Appendix C in this BMP), can and will be complied with.												
	The FSAR can and will be signposted. Where gates are re specifications can be complied with.	equired by the	relevant	local govern	ment, the								
	Turnaround areas (to accommodate type 3.4 fire applianc FSAR.	es) can and w	rill be insta	alled every 50	0m on the								
Supporting None requ	Assessment Details: ired.												
A3.5 Battle	-axe access legs	Applicable:	No	Compliant:	N/A								
	A battle-axe leg cannot be avoided due to site constraints	S.											
	The proposed development is in a reticulated area and the road is no greater than 50m. No technical requirements ne			eg length fror	n a public								
	The proposed development is not in a reticulated area widths, clearances, capacity, gradients and curves (Guide C in this BMP), can and will be complied with.												
	Passing bays can and will be installed every 200m with additional trafficable width of 2m.	a minimum I	length of	20m and a	minimum								
Supporting None requ	Assessment Details ired.												
A3.6 Privat	e driveways	Applicable:	Yes	Compliant:	Yes								
	The private driveway to the most distant external part of the reticulated water, is accessed via a public road with a spen or greater than 70m (measured as a hose lay). No technic	eed limit of 70	km/hr or	less and has									
	The technical construction requirements for widths, c (Guidelines, Table 6 and E3.6. Refer also to Appendix C in t			-									
	Passing bays can and will be installed every 200m with additional trafficable width of 2m.	a minimum I	length of	20m and a	minimum								



 \square \square The turnaround area requirements (Guidelines, Figure 28, and within 30m of the habitable building) can and will be complied with.

Supporting Assessment Details:

The internal driveways will comprise of multiple loop roads, providing access to all areas of the site. The internal driveways include at least 9 internal junctions that will meet the design requirement for turnaround areas given below.



The loop driveway network and <200m between intersections (or the site exit), provides vehicles with multiple routes of travel to comply with the intent of being able to exit the lot without entrapment. Functionally, passing bays are not necessary every 200m as turnaround areas and alternative routes are available every 200m.



5.6 Assessment Statements for Element 4: Water

		WATER									
Element Inter	To ensure water is avo bushfire.	ilable to enable people, pro	operty and infrastru	icture to	o be defended	d from					
-	Proposed Development/Use – Relevant Planning Stage(Do) Development application other than for a single dwelling, ancillary dwelling or minor development										
Element Com	pliance Statement	nt/use achieves the licable acceptable			t by being						
Pathway Applied to Provide an N/A											
(Guidelines) ar Element 1: Loc Dampier Penin https://www.w The technical c also presented and when any appendix if rec	cceptable solution requiren ad apply the guidance est ation and Element 2: Siting sula' (WA Department of Pla a.gov.au/government/docu construction requirements fo in Appendices C and D. The		uidelines for Planning nent: 'Planning in bus I and the 'Bushfire M 21 Rev B) as relevant. <u>a-policy-37-planning</u> 's, and for each firefig 'he proponent where	hfire pro anagem These c bushfire hting wo differen these ar	one areas – Der nent Plan Guida locuments are c -prone-areas. ater supply comp t requirements c re included in th	monstrating nce for the available at conent, are are to apply he relevant					
E4 Water					Compliant:	Yes					
A4.1 Identific	ation of future firefighting	water supply	Applicable:	No	Compliant:	N/A					
$\Box \Box \odot$ at	the subdivision and/or a	at reticulated or sufficient no development application st ority or the requirements of	age in accordanc		0 0	•					
Supporting As None require	ssessment Details d.										
A4.2 Provisior	n of water for firefighting p	ourposes	Applicable:	Yes	Compliant:	Yes					
		is available to the proposed ce with the specifications of			-	nection(s)					
		will be available to the proceeding of the proceeding of the specification of the specificati									
				the lot	that is addition	nal to any					
	A strategic water supply (tank or tanks) for firefighting purposes will be installed within or adjacent to the										



 \Box \Box \heartsuit The strategic static water supply (tank or tanks) will be located no more than 10 minutes travel time from a subject site (at legal road speeds).

The technical requirements (location, number of tanks, volumes, design, construction materials, pipes and fittings), as established by the Guidelines (A4.2, E4 and Schedule 2) and/or the relevant local government, can and will be complied with.

Supporting Assessment Details:

The subject site is reticulated via the 2,000,000L static water supply tank outside of the lot boundary. This tank is owned by and maintained by Alcoa Wagerup. Hydrants will be installed within the lot boundary.

As there is no 'water supply authority,' hydrants will be installed in compliance with AS 2419.1:2021 Section 3.9 Open Yard Protection.

Refer to information contained in Appendix D for the firefighting water supply specifications and technical requirements.



5.7 Additional Bushfire Protection Measures to be Implemented

The following bushfire protection measures are recommended to be implemented and maintained. They are additional to, or a variation of, those established by the relevant acceptable solutions applied to the proposed development/use within Sections 5 of this BMP (as applicable to the proposed development).

The intent of their application is to improve the bushfire performance of the proposed development/use and reduce residual risk levels to persons and property from a bushfire event.

The development of these additional and/or varied protection measures originates the following potential sources (not exhaustive):

- 1. Out of the relevant merit based assessment when the Section titled 'Non-compliance Additional Assessments' has been used in this BMP;
- 2. Out of the relevant performance based assessment when Section titled 'Non-compliance Additional Assessments' has been used in this BMP;
- 3. Out of the development of any other required bushfire planning documents. These include a Bushfire Emergency Plan and the Bushfire Risk Assessment and Management Report;
- 4. Out of any additional bushfire planning guidance documents or position statements issued by the WA Department of Planning, Lands and Heritage;
- 5. From any 'Conditions' which may be applied to a 'Planning Approval' or a 'Notice of Determination; or
- 6. As a recommendation from the bushfire consultant.

The following table summarises the requirements/recommendations with the detail provided in the following sections.

When necessary, the implementation responsibility for these additional protection measures will be stated in Section 6 of this BMP and included in other operational documents as relevant.

This section will contain the additional bushfire protection measures drawn from the Bushfire Risk Report (Addendum 1currently pending). An updated version of this Bushfire Management Plan will be provided on completion of the Bushfire Risk Report.

The bushfire protection measures relevant to the planning proposal (direct variations to the requirements of the Guidelines for Planning in Bushfire Prone Areas v1.4) have been included within this BMP, and are:

- The development area is required to comply with AS 2419.1:2021 Section 3.9 Open Yard Protection, with the footprint occupied by the BESS cabinets considered to be the yard area. The approximate footprint of the BESS development is 22,000m2 which would require 3 hydrants to flow simultaneously and thus a minimum capacity of 476,000L, which the 2,000,000L reticulated supply tank exceeds.
- The substation should be sited such that it is subject to a radiant heat flux not exceeding 19kW/2 (BAL-19).
- The battery supplier/manufacturer, or appropriate fire engineer or similar, will provide evidence that the BESS cabinets and internal and external components will not suffer catastrophic failure when subjected to a maximum of 29kW/m2 radiant heat flux for a period of 10 minutes.
 - This may be achieved through testing or by construction to a higher standard (e.g. NASH).
 - Components being damaged/destroyed may be considered acceptable, where thermal runaway and uncontrolled fire does not occur.
 - Where this additional measure is not or cannot be met, the Bushfire Risk Report will provide establish an alternative Asset Protection Zone.

Additional protection measures beyond planning considerations will be provided in an updated version of this BMP.



6 RESPONSIBILITY CHECKLISTS FOR THE IMPLEMENTATION AND MANAGEMENT OF BUSHFIRE PROTECTION MEASURES

The following sections and their associated tables establish:

- The bushfire protection measures that shall be initially implemented and those requiring ongoing maintenance to the stated requirements;
- The persons responsible for the implementation and maintenance of the required bushfire protection measures; and
- The persons responsible and the timing for compliance certification when required.

The necessity for the BMP to contain this information is established by the Guidelines for Planning in Bushfire Prone Areas (Version 1.4, WAPC 2021) in Appendices 3 and 5.

6.1 Landowner / Operator Responsibilities Prior To Sale or Occupancy or Commencement of Operation

	TABLE 6.2(A) REQUIRED BUSHFIRE PROTECTION MEASURES - IMPLEMENTATION ACTIONS (SUBJECT TO COMPLIANCE CHECK TO BE CONDUCTED BY A BUSHFIRE CONSULTANT)
1	 Prior to occupancy/operation establish the 'Required' Asset Protection Zone (APZ) around habitable buildings (and other structures as required) to satisfy: The minimum required dimensions established in Appendix B1; and The standards established by the Guidelines for planning in bushfire prone areas, DPLH, 2021 v1.4, Schedule 1; or The standards established for an Asset Protection Zone (APZ) by the relevant local government's requirements set out in a section 33 notice under the Bush Fires Act 1954 (annual firebreak/fuel load notice); or
	• An alternative standard in a gazetted local planning scheme; or If native vegetation is required to be modified or removed, ensure that approval has been received from the relevant authority (refer to the applicable local government for advice).
2	Prior to operation, construct the private driveways to comply with the technical requirements referenced in the BMP.
3	Prior to operation, install the required firefighting hydrant to comply with the technical requirements stated in the BMP.
4	Prior to operation, for the proposed high risk land use, there is an outstanding obligation, created by this Bushfire Management Plan, for site and use specific, prevent, prepare, respond and recover bushfire procedures (and associated actions) to be incorporated into the operation's Site Emergency Plan that is a required document to address all potential emergencies and developed by the operator.



For the 'high risk land use' there is an outstanding obligation, created by Guidelines and consequently this Bushfire Management Plan, for a 'Bushfire Risk Assessment and Management Report' to be produced.

5 Additional protection measures that have been identified in the Report, are to be incorporated into the operation's site emergency plan (produced by the operator to address all potential emergencies).

6 Implement the additional bushfire protection measures that have been established within Section 5.7 of this BMP as measures additional to those established by the acceptable solutions.

7 Obtain agreement between Alinta Energy and Alcoa for ongoing management of a 10m buffer around the subject Lot, to be maintained in a low threat condition meeting AS 3959:2018 clause 2.2.3.2(f).



TABLE 6.2(B)

REQUIRED BUSHFIRE PROTECTION MEASURES - IMPLEMENTATION ACTIONS

(SUBJECT TO COMPLIANCE BEING ESTABLISHED BY THE WAPC AND/OR LOCAL GOVERNMENT)

[Relevant when stated as a condition of planning approval]

The landowner/proponent is to register a notification onto the certificate of title and deposited plan (with the required wording stated by the local government).

This will be done pursuant to Section 70A Transfer of Land Act 1893 (as amended) as per 'Factors affecting use and enjoyment of land, notification on title'.

1 This is to notify owners and prospective purchasers of the land that:

- 1. The land is in a designated bushfire prone area as designated by an Order made by the Fire and Emergency Services Commissioner;
- 2. The land is subject to a Bushfire Management Plan that establishes certain protection measures to manage bushfire risk that are to be implemented and continue to be applied at the owner's cost; and
- 3. That additional planning and building requirements may apply to development on this land.

Prior to sale of the lot(s), it is to be compliant with current version of the Shire of Waroona Firebreak Notice issued under s33 of the Bushfires Act 1954.

2 Where the Notice includes a standard for asset protection zones, this may differ from the standards established for an Asset Protection Zone (APZ) by the Guidelines DPLH, 2021 v1.4, Schedule 1 (refer to Appendix B), with the intent to better satisfy local conditions.

An alternative standard in a gazetted local planning scheme may also apply to the subject lot(s).



TABLE 6.2(C)

REQUIRED BUSHFIRE PROTECTION MEASURES - IMPLEMENTATION ACTIONS

(NOT SUBJECT TO COMPLIANCE CHECK)

Prior to relevant building work, inform the builder of the existence of this approved Bushfire Management Plan (BMP). The plan identifies that the development site is within a designated bushfire prone area and states the indicative (or determined) BAL rating(s) that may (or will) be applied to buildings/structures. A BAL assessment report may be required to confirm determined ratings and will be required when ratings are indicative. BAL certificates will need to be issued to accompany building applications.

The BMP may also establish, as an additional bushfire protection measure, that construction requirements to be applied will be those corresponding to a specified higher BAL rating.

¹ Compliance with the Building Code of Australia (Volumes 1 and 2 of the National Construction Code), will require certain bushfire resistant construction requirements be applied to residential buildings in bushfire prone areas (i.e., Class 1, 2 and 3 and associated Class 10a buildings and decks). Other classes of buildings may also be required to comply with these construction when established by the relevant authority or if identified as an additional bushfire protection measure within the BMP.

The deemed to satisfy solutions that will meet the relevant bushfire performance requirements are found in AS 3959 – Construction of Building in Bushfire Prone Areas (as amended) and the NASH Standard - Steel Framed Construction in Bushfire Areas (as amended).

2 Each property owner on sale of the allotment is provided with a copy of the BMP and informed of their responsibilities. A copy of the approved BMP should be attached to all contracts of sale for the lot.



6.2 Occupier / Operator Responsibilities – Ongoing Management

1	TABLE 6.3 REQUIRED BUSHFIRE PROTECTION MEASURES – ONGOING MANAGEMENT ACTIONS
	Maintain the 'Required' Asset Protection Zone (APZ) around habitable buildings (and other structures as required) to satisfy:
	The minimum required dimensions established in Appendix B1; and
1	 The standards established by the Guidelines for planning in bushfire prone areas, DPLH, 2021 v1.4, Schedule 1; or
	 The standards established for an Asset Protection Zone (APZ) by the relevant local government's requirements set out in a section 33 notice under the Bush Fires Act 1954 (annual firebreak/fuel load notice); or
	An alternative standard in a gazetted local planning scheme; or
2	Comply with the Shire of Waroona Firebreak Notice issued under s33 of the Bush Fires Act 1954. Check the notice annually for any changes.
3	Maintain vehicular access routes within the lot to comply with the technical requirements referenced in the BMP and the relevant local government's annual firebreak / hazard reduction notice.
	Ensure that builders engaged to construct dwellings/additions and/or other relevant structures on the lot, are aware of the existence of this approved Bushfire Management Plan (BMP). The plan identifies that the development site is within a designated bushfire prone area and states the indicative (or determined) BAL rating(s) that may (or will) be applied to buildings/structures.
	A BAL assessment report may be required to confirm determined ratings and will be required when ratings are indicative. BAL certificates will need to be issued to accompany building applications.
4	Compliance with the Building Code of Australia (Volumes 1 and 2 of the National Construction Code), will require certain bushfire resistant construction requirements be applied to residential buildings in bushfire prone areas (i.e., Class 1, 2 and 3 and associated Class 10a buildings and decks). The deemed to satisfy solutions that will meet the relevant bushfire performance requirements are found in AS 3959 – Construction of Building in Bushfire Prone Areas (as amended) and the NASH Standard - Steel Framed Construction in Bushfire Areas (as amended).
	As an additional bushfire protection measure, other classes of buildings may also be required to comply with these construction requirements when established by the relevant authority or if identified as an additional bushfire protection measure within the BMP. The BMP may also establish that construction requirements to be applied will be those corresponding to a specified higher BAL rating. When applicable, these requirements will be identified in Section 5.7.
	Ensure all future buildings the landowner has responsibility for, are designed and constructed in full compliance with:
5	• The bushfire resistant construction requirements of the Building Code of Australia (Volumes 1 and 2 of the National Construction Code), as established by the Building Regulations 2012 (WA Building Act 2011); and
	 Any additional bushfire protection measures this Bushfire Management Plan has established are to be implemented.



⁶ The bushfire specific content of the operation's Site Emergency Plan must be reviewed annually, relevant information updated and ensure all bushfire related preparation procedures are carried out.

7 Ensure the ongoing implementation of the BMP, including providing successive landowners with a copy of the BMP and making them aware of the responsibilities it contains.

8 Follow and apply the agreement between Alinta Energy and Alcoa for ongoing management of a 10m buffer around the subject Lot, to be maintained in a low threat condition meeting AS 3959:2018 clause 2.2.3.2(f).



6.3 Local Government Responsibilities – Ongoing Management

TABLE 6.4 REQUIRED BUSHFIRE PROTECTION MEASURES – ONGOING MANAGEMENT ACTIONS To be aware of the potential consequences of any significant changes in the local government's management of land, of which they have vested control (including re-vegetation), that could have an adverse impact on the determined BAL ratings that apply to adjacent existing or future buildings and where: I The determined BAL ratings have been established by an existing BMP or a BAL Assessment; and • The BAL has been correctly determined with appropriate consideration of what might reasonably be expected to potentially change in the future with regards to the classification of the vegetation being altered and/or management of the relevant area of vegetation.



APPENDIX A: DETAILED BAL ASSESSMENT DATA AND SUPPORTING INFORMATION

A1: BAL Assessment Inputs Common to the Method 1 and Method 2 Procedures

A1.1: FIRE DANGER INDICES (FDI/FDI/GFDI)

When using Method 1 the relevant FDI value required to be applied for each state and region is established by AS 3959:2018, Table 2.1. Each FDI value applied in Tables 2.4 – 2.7 represents both the Forest Fire Danger Index (FFDI) and a deemed equivalent for the Grassland Fire Danger Index (GFDI), as per Table B2 in Appendix B. When using Method 2, the relevant FFDI and GFDI are applied.

The values may be able to be refined within a jurisdiction, where sufficient climatological data is available and in consultation with the relevant authority.

Relevant Jurisdiction:				Method 1	Applied FDI:	80
	WA	Region:	Whole State	Method 2	Applied FFDI:	N/A
				Memou z	Applied GFDI:	N/A

A1.2: VEGETATION ASSESSMENT AND CLASSIFICATION

Vegetation Types and Classification

In accordance with AS 3959:2018 Clauses 2.2.3 and C2.2.3.1, all vegetation types within 100 metres of the 'site' (defined as "the part of the allotment of land on which a building stands or is to be erected"), are identified and classified. Any vegetation more than 100 metres from the site that has influenced the classification of vegetation within 100 metres of the site, is identified and noted. The maximum excess distance is established by AS 3959: 2018 Clause 2.2.3.2 and is an additional 100 metres.

Classification is also guided by the Visual Guide for Bushfire Risk Assessment in WA (WA Department of Planning February 2016) and any relevant FPA Australia practice notes.

Modified Vegetation

The vegetation types have been assessed as they will be in their natural mature states, rather than what might be observed on the day. Vegetation destroyed or damaged by a bushfire or other natural disaster has been assessed on its expected re-generated mature state. Modified areas of vegetation can be excluded from classification if they consist of low threat vegetation or vegetation managed in a minimal fuel condition, satisfying AS 3959:2018 Clause 2.2.3.2(f), and there is sufficient justification to reasonable expect that this modified state will exist in perpetuity.

The Influence of Ground Slope

Where significant variation in effective slope exists under a consistent vegetation type, these will be delineated as separate vegetation areas to account for the difference in potential bushfire behaviour, in accordance with AS 3959:2018 Clauses 2.2.5 and C2.2.5.

THE INFLUENCE OF VEGETATION GREATER THAN 100 METRES FROM THE SUBJECT SITE

Vegetation area(s) within 100m of the site whose classification has been influenced by the existence of bushfire prone vegetation from 100m – 200m from the site:	None
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Assessment Statement:	No vegetation types exist close enough, or to a sufficient extent, within the relevant area to influence classification of vegetation within 100 metres of the subject site.
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VEGETATION AREA 1											
Classification		A. FOREST									
Types Identified	Tall woodland A-02				Pine plantation						
Exclusion Clause	N/A	N/A									
Effective Slope	Determined d/slope 3 degrees			Applied Range (Method 1) Downslope >0-5 degre							
Foliage Cover of Tallest Plant Layer	30-70%		Shrub/Heath Height N/A Tra			ee Height	Up to 30m				
Justification Comments	eucalyptus tre	Dense trees creating forest structure. Forest area adjacent to development lot consists of some eucalyptus trees and various planted pine trees. Forest vegetation along the dam are rows of dense Eucalypts. Minimal understorey, consisting mostly of grass.									

Post Development Assumptions: N/A





		VEGETATIO	N ARE	A 2						
		A. FO	REST							
Tall woo	Tall woodland A-02Open forest A-03									
N/A	I/A									
Determined	d/slop	pe 9 degrees	Арр	lied Range (Methoc	1)	Downslope	>5-10 degrees			
30-70%	0	Shrub/Heath He	eight	-	Tre	ee Height	Up to 30m			
Dense canopy	y cover, c	dominated by Eu	icalyp	tus species with limi	ted r	mid and unc	lerstorey.			
Assumptions:	N/A									
PHOTO ID:	3	024-03-18 27:58+08:00		PH			2024-03-18 13: 34: 15+08:00			
92.91547°5 115.92486°E		TTUM WGSB4								
	N/A Determined 30-709 Dense canop Assumptions:	N/A Determined d/slop 30-70% Dense canopy cover, of Assumptions: N/A	A. FOTall woodland A-02N/ADeterminedd/slope 9 degrees30-70%Shrub/Heath HeDense canop cover, dominated by EuAssumptions:N/A $1000000000000000000000000000000000000$	Image: NAL FOREIST Coper N/A Image: Poly of egrees App 30-70% Shrub/Heath Height Dense canop cover, dominated by Eucory Assumptions: N/A Sissupptions: N/A Image: Poly of egrees App Assumptions: N/A Image: Poly of egrees App Image: Poly of egrees App Assumptions: N/A Image: Poly of egrees Image: Poly of egrees Image: Poly of egrees N/A Image: Poly of egrees Image: Poly of egrees Image: Poly of egrees N/A Image: Poly of egrees Image: Poly of egrees Image: Poly of egrees N/A Image: Poly of egrees Image: Poly of egrees Image: Poly of egrees Image: Poly of egrees <td>Tall woodland A-02 Open forest A-03 N/A Determined d/slope 9 degrees Applied Range (Method 30-70% Shrub/Heath Height - Dense canopy cover, dominated by Eucalyptus species with limit Assumptions: N/A Tall woodland A-02 Open forest A-03 N/A - Dense canopy cover, dominated by Eucalyptus species with limit Assumptions: N/A Tall woodland A-02 Open forest A-03 Assumptions: N/A Tall woodland B-02 Open forest A-03 Assumptions: N/A Tall woodland B-02 Open forest A-03 Assumptions: N/A Tall woodland B-02 Open forest A-03 PHOTO ID: 3 Photo B-02 Tall woodland B-02 Tall woodland B-02 Tall woodland B-02 <</td> <td>A. FOREST Tall woodland A-02 Open forest A-03 N/A Determined d/slope 9 degrees Applied Range (Method 1) 30-70% Shrub/Heath Height - Tre Dense canopy cover, dominated by Eucalyptus species with limited r Assumptions: N/A Shrub/Heath Height - Tre Assumptions: N/A - Tre Shrub/Heath Height -</td> <td>A. FOREST Tall woodland A-02 Open forest A-03 N/A Determined d/slope 9 degrees Applied Range (Method 1) Downslope 30-70% Shrub/Heath Height - Tree Height Dense canopy cover, dominated by Eucalyptus species with limited mid and unc Assumptions: N/A Open forest A-03 Middle - Tree Height Dense canopy cover, dominated by Eucalyptus species with limited mid and unc Assumptions: N/A Open forest A-03 Statematication of the Statematica</td>	Tall woodland A-02 Open forest A-03 N/A Determined d/slope 9 degrees Applied Range (Method 30-70% Shrub/Heath Height - Dense canopy cover, dominated by Eucalyptus species with limit Assumptions: N/A Tall woodland A-02 Open forest A-03 N/A - Dense canopy cover, dominated by Eucalyptus species with limit Assumptions: N/A Tall woodland A-02 Open forest A-03 Assumptions: N/A Tall woodland B-02 Open forest A-03 Assumptions: N/A Tall woodland B-02 Open forest A-03 Assumptions: N/A Tall woodland B-02 Open forest A-03 PHOTO ID: 3 Photo B-02 Tall woodland B-02 Tall woodland B-02 Tall woodland B-02 <	A. FOREST Tall woodland A-02 Open forest A-03 N/A Determined d/slope 9 degrees Applied Range (Method 1) 30-70% Shrub/Heath Height - Tre Dense canopy cover, dominated by Eucalyptus species with limited r Assumptions: N/A Shrub/Heath Height - Tre Assumptions: N/A - Tre Shrub/Heath Height -	A. FOREST Tall woodland A-02 Open forest A-03 N/A Determined d/slope 9 degrees Applied Range (Method 1) Downslope 30-70% Shrub/Heath Height - Tree Height Dense canopy cover, dominated by Eucalyptus species with limited mid and unc Assumptions: N/A Open forest A-03 Middle - Tree Height Dense canopy cover, dominated by Eucalyptus species with limited mid and unc Assumptions: N/A Open forest A-03 Statematication of the Statematica			



VEGETATION AREA 3												
Classification A. FOREST												
Types Identified Tall woodland A-02 Open forest A-03												
Exclusion Clause	N/A											
Effective Slope	Determined	l	u/slope	Арр	lied Range (Method	1)	Upslope or	flat 0 degrees				
Foliage Cover of Tallest Plant Layer	30-70%	70	Shrub/Heath He	eight	N/A	Tree Height		Up to 30m				
Justification Comments	Dense canopy	y cover, c	dominated by Eu	calyp	tus species with limit	ed r	mid and unc	lerstorey.				
Post Development	Assumptions:	N/A										
DIRECTION 180 deg(T)	32,91546*5 115.92492*E		CURACY 8 m ATUM WGS84									

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	VEGETATION AREA 4											
A. FOREST												
Tall woodland A-02				Open forest A-03								
N/A												
Determined	ed flat 0 degrees Applied Range (Method 1) Upslope or flat					flat 0 degrees						
30-70% Shrub/Heath Height -		Tr	ee Height	Up to 30m								
Tallest Plant LayerDense canopy cover, dominated by Eucalyptus species with limited midstory and evidence of understorey (grass) management. Has been classified as worst case, as vegetation area is outside development lot and continuous management cannot be guaranteed.												
	/A 30-70% ense canopy nderstorey (g evelopment	/A petermined flat 30-70% ense canopy cover, o nderstorey (grass) mar	Tall woodland A-02 /A petermined flat 0 degrees 30-70% Shrub/Heath He ense canopy cover, dominated by E inderstorey (grass) management. Has be evelopment lot and continuous management	Tall woodland A-02 Ope /A //A altermined flat 0 degrees App 30-70% Shrub/Heath Height ense canopy cover, dominated by Eucaly inderstorey (grass) management. Has been development lot and continuous management	Tall woodland A-02 Open forest A-03 /A //A altermined flat 0 degrees Applied Range (Method 30-70% Shrub/Heath Height - ense canopy cover, dominated by Eucalyptus species with limederstorey (grass) management. Has been classified as worst calevelopment lot and continuous management cannot be guard	Tall woodland A-02 Open forest A-03 /A //A all woodland A-02 Applied Range (Method 1) 30-70% Shrub/Heath Height - Tr ense canopy cover, dominated by Eucalyptus species with limited inderstorey (grass) management. Has been classified as worst case, or evelopment lot and continuous management cannot be guarantee	Tall woodland A-02 Open forest A-03 /A //A Determined flat 0 degrees Applied Range (Method 1) Upslope or 30-70% Shrub/Heath Height - Tree Height ense canopy cover, dominated by Eucalyptus species with limited midstory ar Inderstorey (grass) management. Has been classified as worst case, as vegetation evelopment lot and continuous management cannot be guaranteed.					

Post Development Assumptions: N/A





VEGETATION AREA 5											
Classification	Classification G. GRASSLAND										
Types Identified	ntified Open tussock G-23 Dense sown pasture G-25										
Exclusion Clause	N/A										
Effective Slope	Determined	d/slo	pe 3 degrees	Арр	lied Range (Methoc	1)	Downslope	e >0-5 degrees			
Foliage Cover of Tallest Plant Layer	-		Shrub/Heath He	eight	-	Tr	ee Height	-			
Justification Comments	Lall dry unmanaged grassland										
Post Development	Assumptions:	N/A									
DIRECTION 223 deg(T)	32. 91208*5 115.92202*E		CURACY 12 m ATUM WGSB4								

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VEGETATION AREA 6							
Classification	G. GRASSLAND						
Types Identified	Open ti	Open tussock G-23 Spare open tussock G-24					
Exclusion Clause	N/A	N/A					
Effective Slope	Determined	d/slo	pe 9 degrees	Арр	lied Range (Method	1) Downslope	e >5-10 degrees
Foliage Cover of Tallest Plant Layer	-	-		eight	-	Tree Height	-
Justification Comments	Dry, short, invo	Dry, short, invasive species grassland with scattered native herbs.					
Post Development Assumptions: Grassland needs to be managed to a low threat state in accordance with the management agreement noted in this BMP between Alinta Energy and Aloco The extent of management is indicated in Figure 3.1.1 within this document (10 from the lot boundary).						gy and Alocoa.	
	PHOTO ID:	10					

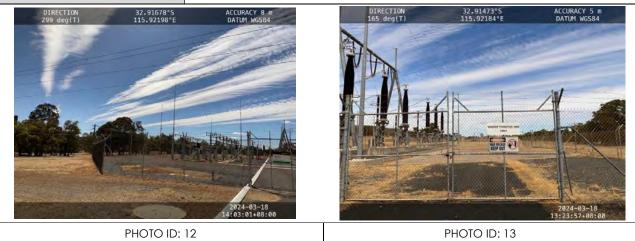


VEGETATION AREA 7								
Classification	G. GRASSLAND							
Types Identified	Open tussock G-23 Sown pasture G-26							
Exclusion Clause	N/A	N/A						
Effective Slope	Determined		u/slope	Applied Range (Method 1) Upslope or flat 0 de				
Foliage Cover of Tallest Plant Layer	-		Shrub/Heath Height		-	Tree Height		-
Justification Comments	Dry, short, invo	Dry, short, invasive species grassland with scattered native herbs.						
Post Development	Grassland needs to be managed to a low threat state in accordance with the management agreement noted in this BMP between Alinta Energy and Alocoa. The extent of management is indicated in Figure 3.1.1 within this document (10m from the lot boundary).							
DIRECTION 225 deg(T)	32.91418*5 115.92449*E		CURACY 9 m ITUM WCS84					
	PHOTO ID:	11						



VEGETATION AREA 8								
Exclusion Clause	2.2.3.2 (e) non-vegetated area							
Effective Slope	Determined	N/A		Арр	lied Range (Method	11)	N/A	
Foliage Cover of Tallest Plant Layer	-		Shrub/Heath Heigh		-	Tree Height	-	
Justification Non vegetated areas of infrastructure within the lot and on the lot boundary. These areas have been concreted and will stay non vegetated.								

Post Development Assumptions: N/A





A1.3: EFFECTIVE SLOPE

EXPLAINING THE ASSESSMENT METHODOLOGY APPLIED BY BUSHFIRE PRONE PLANNING

DEFINITION: Effective slope is "the slope under that classified vegetation which <u>most influences the bushfire attack</u>" (AS 3959:2018, Clause 1.5.11).

"The effective slope under the classified vegetation is not the same as the average slope for the land surrounding the site of the proposed building. The effective slope is that slope which <u>most significantly influences bushfire</u> <u>behaviour</u>" (AS 3959:2018, Clause CB4).

The slope is described as upslope, flat or downslope when viewed from an exposed element (e.g., building) and looking towards the vegetation. It is measured in degrees.

[Note: Additional relevant guidance provided by AS 3959:2018 and NSW RFS, Planning for Bushfire Protection (2019) is incorporated into the applied assessment methodology and is presented at the end of this explanation.]

COMPOUND SLOPES UNDER VEGETATION AND DETERMINING SLOPE SIGNIFICANCE

Non-Linear Slopes: When the slope of ground under the vegetation out to the distance to be assessed (100 m or further if necessary), is not a straight line or nearly straight line slope, then it is made up of several different slopes i.e., it is a compound slope. The different slope angles and lengths must be factored into the determination of the effective slope value to be applied. Different slopes will potentially influence the bushfire rate of spread and intensity, both increasing and decreasing it.

Significant Slope: The AS 3959:2018 bushfire attack level determination methodology, with default inputs, models a fully developed bushfire. Therefore, a <u>'significant' slope is one that will significantly influence bushfire behaviour</u>. To be 'significant' the length of the slope must be 'sufficient' to support a fully developed fire on that slope. The angle of a significant slope could be the determined effective slope for the area of classified vegetation if it is the one that 'most influences the bushfire attack'.

Sufficient Slope Length: Is a slope that will, as a minimum, allow the entire flame depth (flaming zone) of a fully developed fire (100m flame width) to exist on that slope.

The expected flame depth of a fully developed bushfire is a function of the length of time the flaming phase will exist on a section of the fuel bed (the 'residence time') and the bushfire's 'rate of spread'. For a given rate of spread, longer residence times result in greater flame depths. Greater flame depths are correlated with greater flame temperatures and greater flows of radiant heat.

The primary factors that will increase the residence time are:

- Heavier fine fuel loads of grass, leaf litter, twigs, bark etc less than 6mm in width and existing within the surface and near surface layers (and elevated fuel layers when contiguous with the base layers); and
- A greater percentage of larger fine fuels within the fuel load.

The primary factors that increase the rate of spread (apart from fire weather factors), include finer fuels, drier fuels, horizonal continuity of fuel and steeper upward ground slope in the direction of fire travel.

Example values:

- Residence Time: Grassfire 5 15 seconds, Forest fire 25 50 seconds.
- Rate of Spread: Grassfires of a few km/hr are considered fast moving, 5-10 km/hr is common and fastest in the order of 25km/hr. Forest fire typically recorded in metres/hour with 1-1.5 km/hr being considered fast moving and fastest in the order of 3–4 km/hr.
- Flame Depth: More typically, a few metres for grasses to tens of metres for forest fires.

An Isolated Slope: For scenarios where there is a single significant slope (based on the above criteria) additional consideration would need to be given to the time and distance consumed by a bushfire still in its 'developing' phase. This will require due consideration be given to how it is potentially ignited i.e., from a single or multiple points, as this will influence the time and distance required to fully develop. For such scenarios, a normally significant slope may not be sufficiently long. It may be necessary to determine the potential bushfire impact more accurately by



justifying the application of a lesser effective slope, or a lower threat vegetation classification, or calculating a reduced head fire width (using short fire run modelling).

Determined Effective Slope: Only a 'significant' slope can potentially be the effective slope by itself. In which case, for a defined area of classified vegetation area, the worst significant slope under that vegetation is to apply.

The table below presents Bushfire Prone Planning's considerations applied to assessing short and/or compound slopes in determining the effective slope.

Slope Length (m)	Considered a Significant Slope	Considerations in Determining the Effective Slope
< 5	No	Where these short slopes exist as part of a compound slope under an area of classified vegetation, they can be ignored as they will not influence the fire behaviour in that vegetation.
5-20	No	These slopes will have a range of influence on fire behaviour from very little to a degree of influence that must be accounted for to some extent by the determined effective slope that is applied (i.e., with a greater length apply to a greater extent). But the actual slope of these shorter slopes is likely not to be applied as it is not a 'significant' length.
20-30	Maybe	The same considerations applied to the 5-20m slope lengths should be applied here. However, more justification would need to be presented to support their assessment as not being 'significant' slopes.
		For these slope lengths, consideration must be given more broadly to the potential level of risks associated with a bushfire event in this location. The risk level will be a function of the bushfire hazard threat levels (direct attack mechanisms) within the immediate and broader assessment area as influenced by local topography, vegetation extents and types and the exposure and vulnerability of persons and/or buildings/structures to these threats. Higer risk levels require greater precaution meaning these slopes should be considered 'significant', and vice versa.
		Consider the potential for a bushfire on adjoining or nearby land be a source of ignition and/or pre-heating to vegetation on the subject slope.
		Consider if vegetation on the slope is likely be ignited by a single ignition point or is multipoint ignition possible from bushfire an adjoining slopes or the surrounding area. Single point ignition will require a fire to travel further before being fully developed (DFES considers less than 100m fire runs may be considered a short fire run for forest, woodland and scrub vegetation classifications, RFS NSW applies 150m).
		Isolated slopes of this length are less likely to be considered significant as compared to when part of a compound slope.
>30	Yes	Likely to always be a significant slope unless isolated (i.e., exists alone) – in which case, justifying the application of a lesser effective slope, or a lower threat vegetation classification, or calculating a reduced head fire width, are approaches that may need to be applied.

BPP Approach - Slope Variation Within Areas of Vegetation

When multiple 'significant' slope lengths with large differences in degrees of effective slope (or different applicable slope ranges when AS 3959:2018 Method 1 is applied), exists under a single vegetation classification, these will be delineated as separate vegetation areas of classified vegetation to account for the difference in potential bushfire behaviour and impact, in accordance with AS 3959:2018 clauses 2.2.5 and C2.2.5.

Effective Slope Variation Due to Multiple Development Sites

When the effective slope, under a single area of bushfire prone vegetation, will vary significantly relative to multiple proposed development sites (exposed elements), then the effective slopes corresponding to each of the different



locations, are separately identified. The relevant (worst case) effective slope is determined in the direction corresponding to the potential directions of fire spread towards the subject building(s).

AS 3959:2018 EFFECTIVE SLOPE DETERMINATION - GUIDANCE

The Standard presents a broad set of guidance statements that indicate the intent of deriving an effective slope value for use in calculations, rather than detailing the 'in the field' determination process. These include:

- Highlighting the importance of the value by stating "The slope of the land under the classified vegetation
 has a direct influence on the rate of fire spread, the severity of the fire and the ultimate level of radiant heat
 flux" (Clause C2.2.5). [Note: A common rule of thumb is that for every 10 degrees of upslope, a fire will
 double its rate of spread if moving in the direction of the prevailing wind].
- It may be necessary to consider the slope under the classified vegetation for distances greater than 100 m in order to determine the effective slope for that vegetation classification.
- "Where there is more than one slope within the classified vegetation, each slope shall be individually assessed, and the worst case Bushfire Attack Level shall apply" (Clause 2.2.5).

NSW RFS 2019, PLANNING FOR BUSHFIRE PROTECTION - APPENDIX A1.5 - ADDITIONAL DETERMINATION GUIDANCE

- "In identifying the effective slope it may be found that there are a variety of slopes covering different distances within the vegetation. The effective slope is considered to be the slope under the vegetation which will most significantly influence the bushfire behaviour for each aspect. This is usually the steepest slope. In situations where this is not the case, the proposed approach must be justified".
- "Vegetation located closest to an asset may not necessarily be located on the effective slope".

SITE ASSESSMENT DETAILS - EXPLANATION & JUSTIFICATION

The effective slopes determined from the site assessment are recorded in Table 3.2 of this Bushfire Management Plan.



A1.4: SEPARATION DISTANCE

Measuring

The separation distance is the distance in the horizontal plane between the receiver (building/structure or area of land being considered) and the edge of the classified vegetation (AS 3959:2018, clause 2.2.4)

The relevant parts of a building/structure from which the measurement is taken is the nearest part of an external wall or where a wall does not exist, the supporting posts or columns. Certain parts of buildings are excluded including eaves and roof overhangs.

The edge of the vegetation, for forests and woodlands, will be determined by the unmanaged understorey rather than either the canopy (drip line) or the trunk (AS 3959:2018, clause C2.2.5).

Measured Separation Distance as a Calculation Input

If a separation distance can be measured because the location of the building/structure relative to the edge of the relevant classified vegetation is known, this figure can be entered into the BAL calculation. The result is a <u>determined</u> BAL rating.

Assumed Separation Distance as a Calculation Input

When the building/structure location within the lot is not known, an assumed building location may be applied that would establish the closest positioning of the building/structure relative to the relevant area of vegetation.

The assumed location would be based on a factor that puts a restriction on a building location such as:

- An established setback from the boundary of a lot, such as a residential design code setback or a restrictive covenant; or
- Within an established building envelope.

The resultant BAL rating would be <u>indicative</u> and require later confirmation (via a Compliance Report) of the building/structure actual location relative to the vegetation to establish the determined BAL rating.

Separation Distance as a Calculation Output

With the necessary site specific assessment inputs and using the AS 3959:2018 bushfire modelling equations, the range of separation distances that will correspond to each BAL rating (each of which represents a range of radiant heat flux), can be calculated. This has application for bushfire planning scenarios such as:

• When the separation distance cannot be measured because the exact location of the exposed element (i.e., the building, structure or area), relative to classified vegetation, is yet to be determined.

In this scenario, the required information is the identification of building locations onsite that will correspond to each BAL rating. That is, <u>indicative BAL</u> ratings can be derived for a variety of potential building/structure locations; or

• The separation distance is known for a given building, structure or area (and a <u>determined</u> BAL rating can be derived), but additional information is required regarding the exposure levels (to the transfer of radiant heat from a bushfire), of buildings or persons, that will exist at different points within the subject site.

The calculated range of separation distances corresponding to each BAL rating can be presented in a table and/or illustrated as a BAL Contour Map – whichever is determined to best fit the purpose of the assessment.

For additional information refer to the information boxes in Section 3 'Bushfire Attack Levels (BAL) - Understanding the Results and Section 3.2. 'Interpretation of the BAL Contour Map'.

SITE ASSESSMENT DETAILS - EXPLANATION & JUSTIFICATION

For the subject development/use the applicable separation distances values are derived from calculations applying the assessed site data. They are an output value, not an input value and therefore are not presented or justified in this appendix.

The derived values are presented in Section 3, Table 3.1 and illustrated as a BAL contour map in Figure 3.2.



APPENDIX B: ADVICE - ONSITE VEGETATION MANAGEMENT - THE APZ

THE ASSET PROTECTION ZONE (APZ) – DESCRIPTION AND OBJECTIVES

Description: The asset protection zone (APZ) is the area of land surrounding a building or structure on which any combustible materials will be located and/or managed to reduce the potential impact of the direct and indirect attack mechanisms (threats) of bushfire, and therefore reduce the associated risks of building/structure damage or loss, to acceptable levels.

When cultivated and/or natural vegetation exists within the zone it must present low potential threat levels from the direct fire attack mechanisms of flame contact, radiant heat and ember attack and fire driven wind, and the indirect attack mechanisms of debris accumulation, surface fire, tree strike and consequential fire.

The required low threat levels will be achieved as the result of factors that include persistent higher fuel moisture contents, lower flammability and/or minimal fuel loads, due to either limiting the existence of these fuels through removal and/or modification, and the subsequent ongoing management (reduction) of fuel loads.

When a bushfire attack level (BAL) is required to be determined for a building/structure to establish its bushfire construction requirements, the condition of the vegetation within the APZ must satisfy the requirements established by clause 2.2.3.2 of AS 3959:2018 Construction of buildings in bushfire prone areas - to be excluded from classification.

For other combustible structures/materials within the APZ, lower threat levels will be the result of factors such as their appropriate use, lowered vulnerability and location relative to the primary building/structure to be protected.

Objectives: The primary objectives of establishing a low threat area surrounding buildings/structures are to create that performs the following functions:

- 1. To establis an APZ of specified dimensions ensure the building is sufficiently separated from the identified bushfire hazard to limit the impact of its direct attack mechanisms. The required dimensions of the APZ must:
 - Remove the potential for direct flame contact on the building;
 - Reduce the level of radiant heat to which the building is exposed. The APZ dimensions should ensure
 that the potential level of radiant heat impact corresponds to the level of vulnerability of the
 building/structure as determined by the degree to which bushfire resistant construction has been
 applied (or not). For example, when constructed to the requirements corresponding to its determined
 exposure to radiant heat (measured as a bushfire attack level) in accordance with AS 3959 or the NASH
 Standard.
 - Ensure some reduction in the threat level of the ember/burning debris attack mechanism when higher threat vegetation types are present in the vicinity. Note, the reduction in some scenarios will be minimal given the produced quantity, type, survival time and consequent distance that certain embers/burning debris can travel.

Be aware of that research has identified that consequential fire, ignited by embers, is the primary cause (>80%) of building loss in past Australian bushfire events. In bushfire prone areas, the importance of applying protection measures to prevent ember entry to buildings/structures and minimising the existence of consequential fire fuels cannot be overstated.

- 2. To ensure any combustible fuels (debris and structures) or trees that remain within the APZ will be managed and located to limit the potential impact of the indirect attack mechanisms of bushfire by:
 - Minimising the accumulation of debris on, within and around buildings/structures to limit this source of fuel for consequential fires that will result in the direct fire attack mechanisms of flames and greater radiant heat existing closer to the buildings/structures, even though the bushfire hazard exists at a greater distance away;
 - To prevent surface fire moving through the APZ and closer to buildings/structures than the fire in the bushfire hazard itself can;



- Prevent fire weakened or windblown trees/branches impacting buildings/structures and allowing ember/burning debris entry;
- To ensure other combustible materials that can result in a consequential fire ignited by embers/burning debris), within both the APZ and parts of the building, are eliminated, minimised and/or appropriately located or protected (the explanatory notes in the Guidelines provide some guidance for achieving this objective and other sources are available); and
- 3. To provide a defendable space for firefighting activities.

B1: Asset Protection Zone (APZ) Dimensions

APZ DIMENSIONS – DIFFERENCES IN REQUIREMENTS FOR PLANNING ASSESSMENTS COMPARED TO IMPLEMENTATION

THE 'PLANNING BAL-29' APZ DIMENSIONS

The 'Planning BAL-29' APZ is not necessarily the size of the APZ that must be physically implemented and maintained by a landowner. Rather, its purpose is to identify if an acceptable solution for planning approval can be met i.e., can a specified minimum separation distance from bushfire prone vegetation exist.

An assessment against the Bushfire Protection Criteria is conducted for planning approval purposes. To satisfy 'A2.1: Asset Protection Zone', it must be demonstrated that certain minimum separation distances between the relevant building/structure and different classes of bushfire prone vegetation, either exist or can be created and will remain in perpetuity. These minimum separation distances determine the 'Planning BAL-29' APZ dimensions.

Dimensions: The minimum dimensions are those that will ensure the potential radiant heat impact on subject buildings does not exceed 29 kW/m². These dimensions will vary dependent on the vegetation classification, the slope of the land they are growing on and certain other factors specific to the subject site.

Note: For certain purposes associated with vulnerable land uses, the 'Planning BAL-29' APZ may be replaced with dimensions corresponding to radiant heat impact levels of 10 kW/m² and 2 kW/m² and calculated using 1200K flame temperature.

Location: The identified 'Planning BAL-29' APZ must not extend past lot boundaries onto land the landowner has no control over either now or potentially at some point in the future. Limited exceptions include:

- When adjoining land is not vegetated (e.g., built out, roads, carparks, drainage, rock, water body etc.);
- When adjoining land currently or, will in the short term, contain low threat vegetation and or vegetation
 managed in a minimal fuel condition as per AS 3959:2018 cl. 2.2.3.2. It must be reasonable (justifiable) to
 expect this low threat vegetation and/or level of management will continue to exist or be conducted in
 perpetuity and require no action from the owner of the subject lot.

Such areas of land include formally managed areas of vegetation (e.g., public open space / recreation areas / services installed in a common section of land). For specific scenarios, evidence of the formal commitment to manage these areas to a certain standard may be required and would be included in the BMP.

These areas of land can also be part of the required APZ on a neighbouring lot for which the owner of that lot has a recognised responsibility to establish and maintain; and

• When there is a formalised and enforceable capability and responsibility created for the subject lot owner, or any other third party, to manage vegetation on land they do not own in perpetuity. This would be rare, and evidence of the formal authority would be included in the BMP.

The bushfire consultant's 'Supporting Assessment Detail', that is presented in the assessment against the acceptable solution A2.1, will identify and justify how any adjoining land within the 'Planning BAL-29 APZ will meet the APZ standards. Or otherwise, explain how this condition cannot be met.

THE 'BAL RATING' APZ DIMENSIONS



The applicable BAL rating will have been stated in the BAL Assessment Data section of the BAL Assessment Report or BMP (as relevant). The BAL rating can be assessed as 'determined' or 'indicative' or be 'conditional', dependent of the specific conditions associated with the site and the stage of assessment or planning. It is the eventual assessment of the 'Determined' BAL that will establish both the BAL rating that is to apply and its corresponding 'BAL Rating' APZ dimensions.

Dimensions: The minimum dimensions of the 'BAL Rating' APZ to be established and maintained will be those that correspond to the determined BAL rating for the subject building/structure that has accounted for surrounding vegetation types, the slope of the land they are growing on and certain other factors specific to the subject site and surrounding land.

Establishing the 'BAL Rating' APZ will ensure that the potential radiant heat exposure of the building/structure will be limited to the level that the applied construction requirements are designed to resist when that building/structure is required to be constructed to the standard corresponding to the Determined BAL.

Note: For certain purposes associated with vulnerable land uses, the 'BAL Rating' APZ dimensions may be replaced with dimensions corresponding to the specific radiant heat impact levels of 10 kW/m^2 and 2 kW/m^2 and calculated using 1200K flame temperature.

Location: The same conditions will apply as for the 'Planning BAL-29' APZ.

THE 'LOCAL GOVERNMENT' APZ DIMENSIONS

Some Local Government's establish the dimensions of the APZ that must be established surrounding buildings in their annual Firebreak/Hazard Reduction Notice. Or for a specific site they may establish a maximum allowable dimension (typically that corresponding to BAL-29). When established, the landowner will need to be comply with these.

THE 'REQUIRED' APZ DIMENSIONS

This is the APZ that is to be established and maintained by the landowner within the subject lot and surrounding the subject building(s). It will be identified on the Property Bushfire Management Statement when it is required to be included in this Report/Plan.

Dimensions: The 'Required APZ' dimensions are the minimum (or maximum when relevant) distances away from the subject building(s) that the APZ must extend. These distances will not necessarily be the same all around the building(s). They can vary and are dependent on the different vegetation types (and their associated ground slope) that can exist around the building(s), and specific local government requirements. The dimensions to implement are determined by:

- A. The 'BAL Rating APZ' of the subject building(s) when distances are greater than 'B' below (except when 'B' establishes a maximum distance); or
- B. The 'Local Government' APZ' derived from the Firebreak/Hazard Reduction Notice when distances are greater than 'A' above, other than when a maximum distance is established, in which case this will apply; or
- C. A combination of 'A' and 'B'.

Location: The same conditions will apply as for the 'Planning BAL-29' APZ.



B1.1: THE APZ DIMENSIONS REQUIRED TO BE IMPLEMENTED BY THE LANDOWNER

	DETER	MINATION OF THE 'R	EQUIRED' APZ DIME	NSIONS TO I	BE IMPLEMEN	NTED AND M	AINTAINED B	Y LANDOWNER WITHI	N THEIR LOT	
			Minimum Required Separation Distances from Building to Vegetation (metres)							
Relevant Buildings(s)	Vegetation Classification [Refer to Fig 3.1]		Established by the 'BAL Rating' APZ Dimension				Established by the "Local Government' APZ Dimension		The 'Required'	
			Determined Stated 'Indicative' or 'Conditional' BAL Radiant Heat		nal' BAL	Firebreak / Maximum Hazard Reduction Allowed		APZ Dimensions [see note]		
	Area	Class	Impact	BAL-29	BAL-19	BAL-12.5	BAL-LOW	Notice		
	1	(A) Forest		27-<37	37-<50	50-<100	>100		N/A	
	2	(A) Forest	BAL-19	33-<46	46-<61	61-<100	>100	None Stated		To lot boundary or area determined within the stated in the vegetation management agreement between Alinta
	3	(A) Forest		21-<31	31-<42	42-<100	>100			
	4	(A) Forest		21-<31	31-<42	42-<100	>100			
Substation	5	(G) Grassland		9-<14	14-<20	20-<50	>50			
	6	(G) Grassland		10-<16	16-<23	23-<50	>50			
	7	(G) Grassland		8-<12	12-<17	17-<50	>50			
	8	Excluded cl 2.2.3.2(e)		-	-	-	-			
	1	(A) Forest		27-<37	37-<50	50-<100	>100			Energy and Alcoa
	2	(A) Forest		33-<46	46-<61	61-<100	>100			
BESS cabinets	3	(A) Forest	BAL-29	21-<31	31-<42	42-<100	>100	None Stated		
	4	(A) Forest		21-<31	31-<42	42-<100	>100			
	5	(G) Grassland		9-<14	14-<20	20-<50	>50			



6	(G) Grassland	10-<16	16-<23	23-<50	>50
7	(G) Grassland	8-<12	12-<17	17-<50	>50
8	Excluded cl 2.2.3.2(e)	-	-	-	-

Note: The 'Required' APZ Dimension corresponding to each area of vegetation is the greater of the 'BAL Rating' or the 'Firebreak/Hazard Reduction Notice' APZ dimensions unless a local government maximum distance(s) is established as a result of their environmental assessment of the subject site. The area of the APZ will also be limited to the subject lot boundary unless otherwise justified in this Report/Plan. Final determination of the dimensions will require that any indicative or conditional BAL becomes a 'Determined' BAL.

Comments:

None required.



B2: The Standards for the APZ as Established by the Guidelines (DPLH, v1.4)

Within the Guidelines (source: https://www.wa.gov.au/government/document-collections/state-planning-policy-37-planning-bushfire-prone-areas), the management Standards are established by:

- Schedule 1: Standards for Asset Protection Zones (see extract below) established by the Guidelines; and
- The associated explanatory notes (Guidelines E2) that address (a) managing an asset protection zone (APZ) to a low threat state (b) landscaping and design of an asset protection zone and (c) plant flammability.

Guidelines for Planning in Bushfire Prone Areas

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ELEMENT 2: SITING AND DESIGN OF DEVELOPMENT

SCHEDULE 1: STANDARDS FOR ASSET PROTECTION ZONES

OBJECT	REQUIREMENT						
Fences within the APZ	 Should be constructed from non-combustible materials (for example, iron, brick, limestone, metal post and wire, or bushfire-resisting timber referenced in Appendix of AS 3959). 						
Fine fuel load (Combustible, dead vegetation matter <6 millimetres in thickness)	 Should be managed and removed on a regular basis to maintain a low threat state. Should be maintained at <2 tonnes per hectare (on average). Mulches should be non-combustible such as stone, gravel or crushed mineral eart or wood mulch >6 millimetres in thickness. 						
Trees* (>6 metres in height)	 the building. Branches at maturity sho Lower branches and loo the ground and/or surfo Canopy cover within the Tree canopies at maturity continuous canopy. Star be treated as an individ APZ will not exceed 15 the APZ. Figure 19: Tree canop 	and not touch or overha ase bark should be remo ace vegetation. APZ should be <15 p y should be at least five ands of existing mature tre ual canopy provided the per cent and are not co	e of six metres from all elevations of ng a building or powerline. wed to a height of two metres above er cent of the total APZ area. metres apart to avoid forming a ses with interlocking canopies may at the total canopy cover within the ponnected to the tree canopy outside om 15 to				
	15%	30%	70%				



Shrub* and scrub* (0.5 metres to six metres in height). Shrub and scrub >6 metres in height are to be treated as trees.	 Should not be located under trees or within three metres of buildings. Should not be planted in clumps >5 square metres in area. Clumps should be separated from each other and any exposed window or door by at least 10 metres.
Ground covers* (<0.5 metres in height. Ground covers >0.5 metres in height are to be treated as shrubs)	 Can be planted under trees but must be maintained to remove dead plant material, as prescribed in 'Fine fuel load' above. Can be located within two metres of a structure, but three metres from windows or doors if >100 millimetres in height.
Grass	 Grass should be maintained at a height of 100 millimetres or less, at all times. Wherever possible, perennial grasses should be used and well-hydrated with regular application of wetting agents and efficient irrigation.
Defendable space	 Within three metres of each wall or supporting post of a habitable building, the area is kept free from vegetation, but can include ground covers, grass and non- combustible mulches as prescribed above.
LP Gas Cylinders	 Should be located on the side of a building furthest from the likely direction of a bushfire or on the side of a building where surrounding classified vegetation is upslope, at least one metre from vulnerable parts of a building. The pressure relief valve should point away from the house. No flammable material within six metres from the front of the valve. Must sit on a firm, level and non-combustible base and be secured to a solid structure.

* Plant flammability, landscaping design and maintenance should be considered - refer to explanatory notes

B3: The Standards for the APZ as Established by the Local Government

Refer to the firebreak / hazard reduction notice issued annually (under s33 of the Bushfires Act 1954) by the relevant local government. It may state Standards that vary from those established by the Guidelines and that have been endorsed by the WAPC and DFES as per Section 4.5.3 of the Guidelines.

A copy of the applicable notice is not included here as they are subject to being reviewed and modified prior to issuing each year. Refer to ratepayers notices and/or the local government's website for the current version.



AS 3959:2018

B4: Vegetation and Areas Excluded from Classification - Ensure Continued Exclusion

AS 3959:2018 establishes the methodology for determining a bushfire attack level (BAL). The methodology includes the classification of the subject site's surrounding vegetation according to their 'type' and the application of the corresponding relevant bushfire behaviour models to determine the BAL.

Certain vegetation can be considered as low threat or managed in a minimal fuel condition and can be excluded from classification. Where this has occurred in assessing the site, the extract from AS3959:2018 below states the requirements that must continue to exist for the vegetation on those areas of land to be excluded from classification (including the size of the vegetation area if relevant to the assessment).

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2.2.3.2 Exclusions—Low threat vegetation and non-vegetated areas
The following vegetation shall be excluded from a BAL assessment:
(a) Vegetation of any type that is more than 100 m from the site.

- (h) Single areas of warstation loss than 1 he in area and not within 100 m
- (b) Single areas of vegetation less than 1 ha in area and not within 100 m of other areas of vegetation being classified vegetation.
- (c) Multiple areas of vegetation less than 0.25 ha in area and not within 20 m of the site, or each other or of other areas of vegetation being classified vegetation.
- (d) Strips of vegetation less than 20 m in width (measured perpendicular to the elevation exposed to the strip of vegetation) regardless of length and not within 20 m of the site or each other, or other areas of vegetation being classified vegetation.
- (e) Non-vegetated areas, that is, areas permanently cleared of vegetation, including waterways, exposed beaches, roads, footpaths, buildings and rocky outcrops.
- (f) Vegetation regarded as low threat due to factors such as flammability, moisture content or fuel load. This includes grassland managed in a minimal fuel condition, mangroves and other saline wetlands, maintained lawns, golf courses (such as playing areas and fairways), maintained public reserves and parklands, sporting fields, vineyards, orchards, banana plantations, market gardens (and other non-curing crops), cultivated gardens, commercial nurseries, nature strips and windbreaks. NOTES:
 - 1 Minimal fuel condition means there is insufficient fuel available to significantly increase the severity of the bushfire attack (recognizable as short-cropped grass for example, to a nominal height of 100 mm).
 - 2 A windbreak is considered a single row of trees used as a screen or to reduce the effect of wind on the leeward side of the trees.



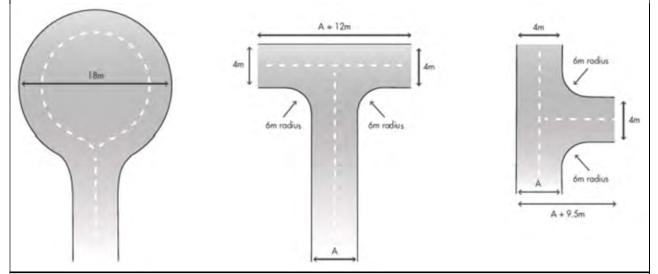
APPENDIX C: TECHNICAL REQUIREMENTS FOR VEHICULAR ACCESS

The design/layout requirements for access are established by the acceptable solutions of the Guidelines (DPLH, 2021 v1.4) Element 3 and vary dependent on the access component, the land use and the presence of 'vulnerable' persons. Consequently, the best reference source are the Guidelines. The technical requirements that are fixed for all components and uses are presented in this appendix.

GUIDELINES TABLE 6, EXPLANATORY NOTES E3.3 & E3.6 AND RELEVANT ACCEPTABLE SOLUTIONS

	Vehicular Access Types / Components					
Technical Component	Public Roads	Emergency Access Way ¹	Fire Service Access Route ¹	Battle-axe and Private Driveways ²		
Minimum trafficable surface (m)	In accordance with A3.1	6	6	4		
Minimum Horizontal clearance (m)	N/A	6	6	6		
Minimum Vertical clearance (m)	4.5					
Minimum weight capacity (†)	15					
Maximum Grade Unsealed Road ³		1:10 (10%)				
Maximum Grade Sealed Road ³	As outlined in the IPWEA	1:7 (14.3%)				
Maximum Average Grade Sealed Road	Subdivision Guidelines	1:10 (10%)				
Minimum Inner Radius of Road Curves (m)		8.5				

Turnaround Area Dimensions for No-through Road, Battle-axe Legs and Private Driveways ⁴



Passing Bay Requirements for Battle-axe leg and Private Driveway

When the access component length is greater than the stated maximum, passing bays are required every 200m with a minimum length of 20m and a minimum additional trafficable width of 2m (i.e. the combined trafficable width of the passing bay and constructed private driveway to be a minimum 6m).

Emergency Access Way – Additional Requirements

Provide a through connection to a public road, be no more than 500m in length, must be signposted and if gated, gates must be open the whole trafficable width and remain unlocked.

¹ To have crossfalls between 3 and 6%.

² Where driveways and battle-axe legs are not required to comply with the widths in A3.5 or A3.6, they are to comply with the Residential Design Codes and Development Control Policy 2.2 Residential Subdivision.

³ Dips must have no more than a 1 in 8 (12.5% or 7.1 degree) entry and exit angle.

⁴ The turnaround area should be within 30m of the main habitable building.



APPENDIX D: TECHNICAL REQUIREMENTS FOR FIREFIGHTING WATER SUPPLY

D1: Reticulated Areas – Hydrant Supply

The Guidelines state "where a reticulated water supply is existing or proposed, hydrant connection(s) should be provided in accordance with the specifications of the relevant water supply authority."

The main scheme water suppliers / authorities in WA are The Water Corporation, AqWest – Bunbury Water Corporation and Busselton Water Corporation. Various local authority exists in other non-scheme and regional areas. However, most existing fire hydrants are connected to Water Corporation water mains.

Consequently, the hydrant location specifications from The Water Corporation's 'No 63 Water Reticulation Standard' (Ver 3 Rev 15) are provided in the extract below with the key distances relevant to bushfire planning assessments being highlighted. This Standard is deemed to be the baseline criteria for developments and should be applied unless different local water supply authority conditions apply. Other applicable specification will be found in the Standard.

Note: The maximum distance from a hydrant to the rear of a lot/building is generally interpreted as not applicable to large lot sizes where the maximum distance becomes an impractical limitation i.e., typically rural residential areas.

Standard DS 63 Reticulation Sta	
2.2.1.5	Appurtenances
с.	Hydrants
	Hydrants shall be screw-down hydrant with built-in isolation valve and installed only on DN10 or larger pipes. Hydrants shall be located:
	 so that the maximum distance between a hydrant and the rear of a building envelope. (o in the absence of a building envelope the rear of the lot) shall be 120m;
	 so that spacing (as measured by hose-run) between hydrants in non-residential or mixed use areas shall be maximized and no greater than 100m;
	 so that spacing (as measured by hose-run) between hydrants in residential areas with lot per dwelling <10,000m² shall be maximized and no greater than 200m;
	 so that spacing between hydrants (as measured by hose-run) in rural residential area where minimum lots per dwelling is >10,000 m² (1ha) shall be maximized and no greate than 400m;
	• centrally along the frontage of a lot to avoid being under driveways, unless the lo features a frontage 6m or less, in which case it shall be placed to the side opposite the driveway;
	 at lots that have the widest frontage in the local area;
	 where appropriate at the truncation of road junctions or intersections so that they can serve more than one street and can be readily located;
	 on both sides of the major roads at staggered intervals where there are mains on both side of the road;
	 at major intersections on dual multi-lane roads, where two hydrants are to be sited or diagonally opposite corners;
	 hydrants should be located at least 20m from traffic calming devices i.e., median slow points or chokers, chicanes, mini traffic circles, and intersection 'pop-outs' to ensur- traffic is not impeded;
	 in a position not less than 10m from any high voltage main electrical distribution equipment such as transformers and distribution boards, liquefied petroleum gas or othe combustible storage;
	 directly on top of the main using a tee unless proved to be impractical.

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PART D – OTHER BUSINESS

1. State Administrative Tribunal Applications and Supreme Court Appeals

The DAP notes the status of the following State Administrative Tribunal Applications and Supreme Court Appeals:

Current SAT Applications							
File No. & SAT DR No.	LG Name	Property Location	Application Description	Date Lodged			
DR179/2023 DAP/22/02358	Shire of Serpentine Jarrahdale	Lot 806 South Western Highway, Byford	Proposed Showroom and Fast Food/Takeaway Development	4/12/2023			
DR193/2023 DAP/23/02545	Shire of Serpentine Jarrahdale	Lot 218 (No.575) Abernethy Road, Oakford	Proposed Educational Establishment	19/12/2023			
DR94/2024 DAP/23/02623	City of Cockburn	Lot 9501 Gaebler Road, Hammond Park	Mixed Use Commercial Development	27/06/2024			

Current Supreme Court Appeals						
File No.	LG Name	Property	Application	Date		
		Location	Description	Lodged		
DAP/23/02496 CIV 2251 of 2023	City of Swan	Lot 2 & 67 (No.163) and Lot 18 (No.159) James Street, Guildford	Proposed redevelopment of Vaudeville Theatre	03/11/2023		

2. General Business

3. Meeting Closure

In accordance with Section 7.3 of the DAP Standing Orders 2024 a DAP member must not publicly comment on any action or determination of a DAP.