DEVELOPMENT SERVICES ATTACHMENTS
ORDINARY MEETING OF COUNCIL
WEDNESDAY 19 MARCH 2025

REPORT NUMBER	REPORT TITLE AND ATTACHMENT DESCRIPTION	PAGE NUMBER(S)
DS01 – 03/25	**Application for Development Approval – 2178 (Lot 28) Chittering Road, Lower Chittering – Farmstay Accommodation** **Attachments** 1. Planning Report 2. Plans 3. Schedule of Submissions 4. Bushfire Management and Bushfire Emergency Plan	1 – 231
DS02 – 03/25	**Local Development Plan – Lot 1942 (1942) Morely Road, Lower Chittering** **Attachments** 1. Local Development Plan 2. Schedule of Submissions	232 – 237
DS03 – 03/25	**Proposed 'Road Side Rest Area' Corner of Julimar Road and Chittering Road, Lower Chittering** **Attachments** 1. Schedule of Submissions 2. Advertising Map	238 – 243

Development Application

Proposed Short Stay Chalets

Lot 28 (No. 2178) Chittering Road,
Lower Chittering

Harley Dykstra

PLANNING & SURVEY SOLUTIONS

DOCUMENT CONTROL

Control Version	Date	Status	Distribution	Comment
A	27/05/2024	Draft	HD	For QA
B	28/05/2024	Final	Client	For Comment
C	DD/MM/YYYY	Final	WAPC/LG	For Lodgement

Prepared for:	Conrad Mollar	Date:	28 May 2024
Prepared by:	AR	Job No:	23760
Reviewed by:	LB	Ref:	B

DISCLAIMER

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1 INTRODUCTION

This planning report forms the basis of a development application for 4 proposed Short Stay Chalets, Administrative Building and associated ancillary infrastructure at Lot 28 (No.2178) Chittering Road, Lower Chittering ('the subject land').

The proposed development comprises a single alignment of Chalets to be used for short stay accommodation.

An assessment of the proposal against the Shire of Chittering's Local Planning Scheme No. 6 (LPS 6), and Local Planning Strategy has been conducted in order to prepare this Planning Report, which includes a description of the proposed works, the subject land, surrounding context, planning assessment against the relevant planning framework, as well as access, fire mitigation and the environment.

A number of specialised documents as outlined below, have been prepared by various subconsultants in support of this proposal:

- A Bushfire Management Plan prepared by Bushfire Prone Planning;
- A Bushfire Emergency Evacuation Plan prepared by Bushfire Prone Planning;
- Environmental Assessment – Flora and Vegetation Survey and Black Cockatoo Habitat Assessment by Del Botanics; and
- Site and Soil Evaluation Assessment by Local Geotechnics.

2 BACKGROUND AND SITE CONTEXT

2.1 Location

Lot 28 (No.2178) Chittering Road, Lower Chittering (the 'subject land') is 35.2985ha and is located within the Shire of Chittering. The subject land is approximately 12km northeast of Muchea. The subject land is bound by Chittering Road to the northwest and is otherwise surrounded by land zoned 'Agricultural Resource' under the Shire of Chittering LPS 6. A location plan has been included at **Figure 1** with an annotated aerial image of the site included at **Figure 2** that outlines the extent of the development area.

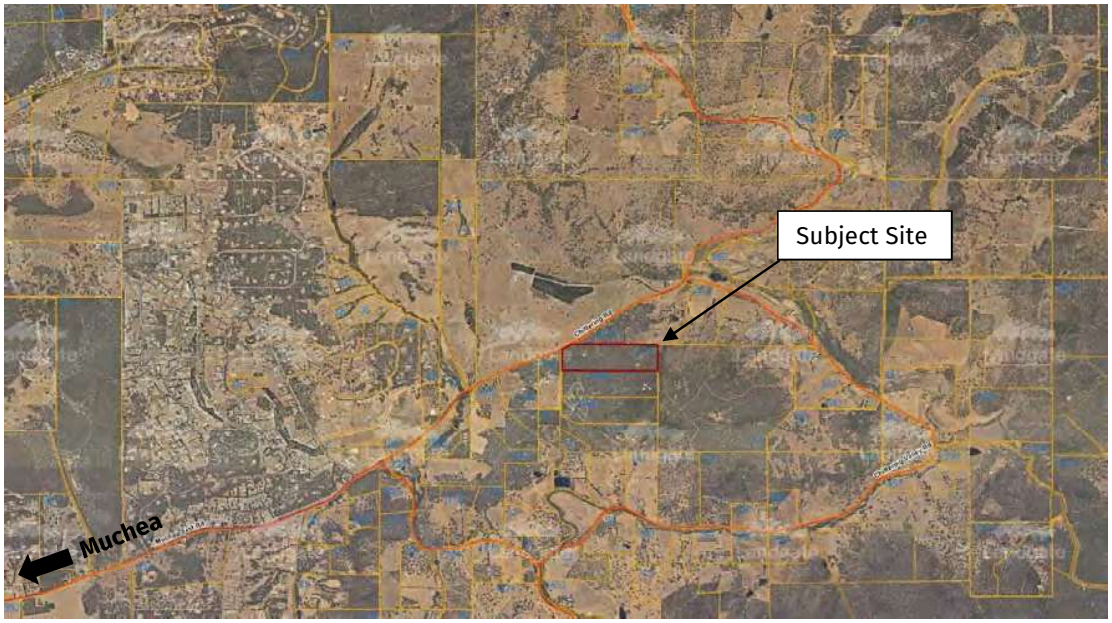


Figure 1 Location Map

2.2 Property Details

The property details for Lot 28 (No. 2178) Chittering Road, Lower Chittering are as follows:

LOT NUMBER:	DEPOSITED PLAN:	VOLUME/FOLIO:	LOT AREA:	REGISTERED PROPRIETOR:
28	D077035	1897/730	35.2985ha	COENRAAD HENDRIK MOLLER ELANRI MOLLER

A certificate of title has been attached at **Appendix A** of this report.

Figure 2 Aerial Image

2.3 Site Context

The subject site is located on the fringe of the Avon Valley National Park and amongst the semi-rural area of Chittering, Northan and Toodyay. Within proximity of the subject site there several nature reserves, farm-stays, wineries, and other boutique tourist themed businesses for travellers to experience and enjoy.

The proposed development is situated perfectly to provide accommodation options for travellers to experience what this area has to offer.

2.4 Existing Buildings, Structures and Vegetation

An existing dwelling is located in the southeast corner of the property along with existing sheds and water tanks. The remainder of the site is covered in native vegetation, with a small, cleared area located in the northwest portion of the site in close proximity to the development site.

The highest point of the subject site is located towards the southeast corner at 208mAHD with a steep slope towards the northeastern corner. From the property high point, the property slopes in a western boundary. The proposed chalet's will be located at approximately 185mAHD.

3 PROPOSED DEVELOPMENT

3.1 Development Summary

This application proposes the development of 4 Short Stay Chalets clustered together in the northwestern portion of the subject land. An excerpt of the site layout has been included at **Figure 3**, while the development plans, including overall site plan, floor plans and elevations have been included at **Appendix B.**

The landowners are looking to provide for and implement small-scale experiences for guests to the property, beyond the experiences that are already established within proximity of the site. These experiences are likely to include installation and ongoing establishment of breeding nests and habitats for native birds and animals, star gazing (equipment to be provided to each chalet), enjoyment and experience of wildflower walks through the property on marked paths and bird watching.

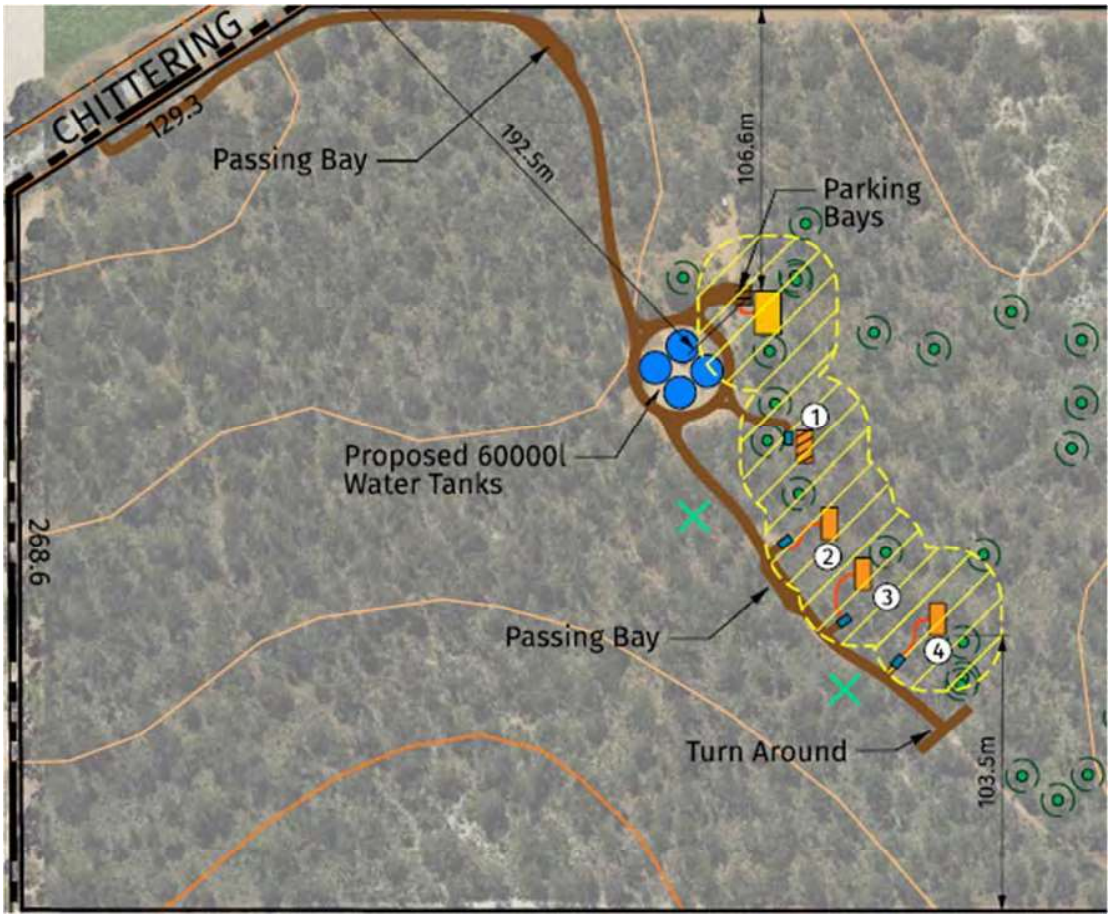


Figure 3 Excerpt of Site Plan

3.2 Site Layout and Rationale

The location of the proposed development has been specifically identified to be close to Chittering Road, within an area of the site which is flatter and contains areas of clearing or clearing understorey, whilst still providing a vegetative buffer to ensure privacy for the tourist development and maintain the rural amenity enjoyed along this road.

The chalets have been clustered together to ensure minimal impact to the environment by way of clearing and fire mitigation measures and suitably located on the lower/flatter portion of the land to comply with the requirements of LPS 6, Special Control Area.

3.3 Built Form

The proposed short-stay accommodation is to be designed as one-bedroom chalets, with open plan living and a separate bathroom, with external decking to be enjoyed by the patrons. Each unit will be provided with a separate sheltered car-bay a short walk from the unit. Unit 1 has been designed to satisfy accessibility specifications.

The landowners are keen to implement a variety of sustainable methods and materials as part of the proposed development. The units will be constructed using strawbale, which carry very low greenhouse gas emission rating and known for its thermal mass and sound insulation benefits.

The units have been placed to maximise the east to west elevation to maximise the sun rotation and will be powered using solar power.

An Administration Building is proposed, which will incorporate the Office/Reception counter, laundry and storage facilities, maintenance shed, and the Emergency Shelter room as detailed in the BMP and BEP (refer **Appendix C**).

3.4 Site Access

Access to the proposed development is planned by way of the existing driveway access and crossover to Chittering Road. The track is considered in all weather condition and is maintained by the landowners who reside on the property in the dwelling located in the southeast.

Utilisation of this track will ensure that minimal impact to the existing site and vegetation will be required to provide access to the proposed development.

3.5 Environmental Elements

The landowners engaged Del Botanics to undertake a Flora and Vegetation Survey and Black Cockatoo Habitat Assessment due to the remnant vegetation on site and the requirement to undertake some clearing as part of the proposed development.

The site assessment was undertaken in September 2023 and identified vegetation across the property between “Degraded” to “Very Good”, generally described as Open Forrest, over open tall shrubland. No species of Threatened, Priority Flora or Threatened Ecological Communities pursuant to the *Biodiversity Conservation Act 2016* or the *Environmental Protection and Biodiversity Conservation Act 1999* were located during the time of the survey.

Potential Black Cockatoo Habitat Trees were recorded on site, which included *Corymbia Calophylla*, *Eucalyptus Marginata*, *Eucalyptus Wandoo* and *Eucalyptus Acedens*. Of the 58 that were recorded, 10 of these trees have more than one sizeable hollow. The location of potential habitat trees within proximity of the proposed development have been identified on the Site Plan. Whilst there were no signs of use of hollows by Black Cockatoos during the two site inspections, there were signs of foraging within the site. The placement and establishment of the proposed development has been

undertaken to ensure that these tree species will be protected for the future potential use of the Black Cockatoo species.

The proposed development has been clustered in an area of the site that has been previously disturbed to minimise the amount of clearing required to establish the development footprint. It is also proposed that the bushfire mitigation requirements discussed within the Bushfire Management Plan (**Appendix C**) and Section 4.3 of this report will be undertaken in a way to ensure the least amount of disturbance to the vegetation on site, which is considered the drawcard of this site for tourism accommodation.

A full copy of this report is included as **Appendix D** of this report.

4 PLANNING FRAMEWORK

4.1 Shire of Chittering Local Planning Scheme No. 6

4.1.1 Land Use Permissibility

The subject site is zoned 'Agricultural Resource' under the Shire of Chittering Local Planning Scheme No 6 (LPS 6) (see **Figure 4**), which requires development to be consistent with the following objectives:

a) *Preserve productive land suitable for grazing, cropping and intensive horticulture and other compatible productive rural uses in a sustainable manner;*

b) *Protect the landform and landscape values of the district against despoliation and land degradation;*

c) *Encourage intensive agriculture and associated tourist facilities, where appropriate;*

d) *Allow for the extraction of basic raw materials where it is environmentally and socially acceptable.*

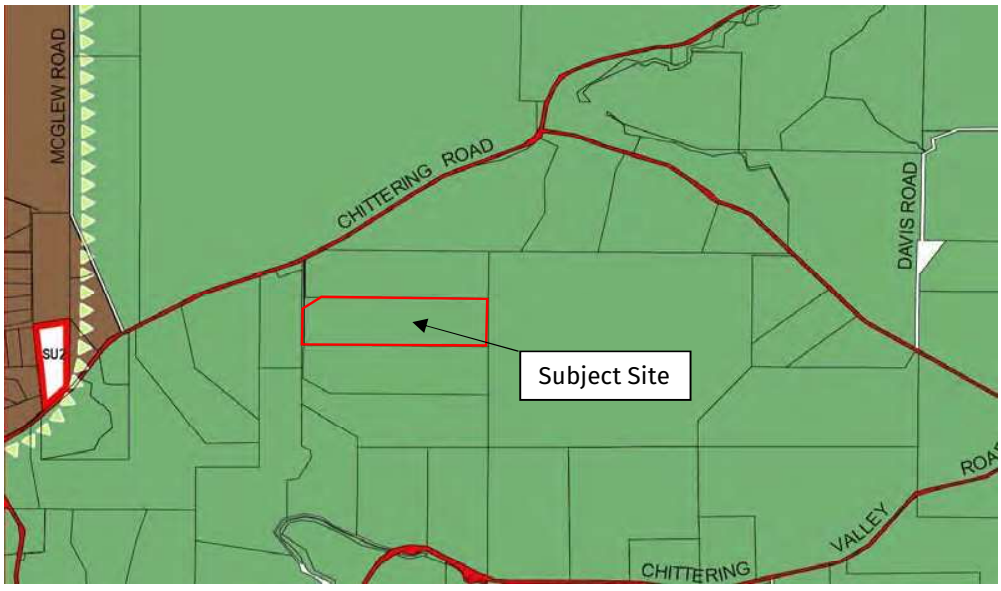


Figure 4 LPS 6 – Scheme Map

The development proposal is considered consistent with the objectives of the 'Agricultural Resource' zone in that it is providing tourist accommodation in an area that is needed to support the nearby winery/brewery region and Avon Valley National Park.

Due to the native vegetation on site the land is not considered appropriate for intensive horticulture due to the need to clear a significant portion of the land, therefore a clustered tourist accommodation development provides an opportunity to support the surrounding tourist destinations with minimal impact to the environmental values of the land.

Additionally, the Department of Planning Lands and Heritage's PlanWA mapping system indicates that the property is not affected by an area of Basic Raw Material.

The property is also located within a Special Control Area (SCA) 'Landscape Protection Area'. The purpose of this SCA is to:

a) *Secure the areas delineated on the Scheme Map;*

b) *To conserve and enhance the character of the significant landscape area; and*

c) *To ensure land use and developments are compatible with the landscape values.*

In considering an Application for Development approval, the local government shall have regard to the following considerations, with appropriate justification and responses also outlined in the table below:

Consideration	Response
The statement and nature of the key elements of the landscape and its character.	In support of the development proposal the landowners engaged Del Botanics to undertake an Environmental Assessment of the property to identify the areas of significance.
The conservation and enhancement of the landscape values.	The development is predominately proposed in an area that has previously been subject to disturbance.
The impact of any buildings and associated works on the landscape due to height, bulk, colour, general appearance and the need to remove vegetation	The infrastructure associated with the proposed development has purposely been located on the lower flat part of the property and setback from Chittering Road to ensure visibility of the development is minimal. The materials and design of the structures are consistent with the natural environment.
The requirement for all roofing of any building to be of a non-reflective nature.	The roofing will be non-reflective and confirmed as part of the Building Permit.
A change of land use where in the opinion of the local government the proposed development may cause a deterioration of the	The proposed development has been appropriately placed on the lower portion of the site and setback approximately 200m from

landscape value and/or cause an adverse effect(s) on the environment.	Chittering Road, further screened by the existing vegetation on site. The proposed development will utilise the existing crossover and internal access alignment so as to reduce unnecessary impact to vegetation.

The proposed development is considered appropriate within the special control area as identified within the above table.

The development is designed with sustainability and environmental functions at the forefront of its purpose and aims to have as minimal impact on the existing environment as possible. The landowner is committed to enhancing the environmental values of the property to counteract the clearing required as a result of the proposed development.

4.2 Shire of Chittering Local Planning Strategy

The Shire of Chittering Local Planning Strategy (LPS) has been prepared to guide future land use planning and decision making, and to provide the rationale for land use and development controls to be included in the Shire's local planning scheme.

The intent of the Strategy is to *'conserve and consolidate'*, in that it aims to *'conserve'* its natural areas and rural character and to *'consolidate'* future development.

The subject land is identified as Rural land within the LPS and identified as being within an indicative 'high conservation value area' which was determined using aerial imagery and desk-top analysis. To provide a more accurate and detailed assessment, the landowner engaged Del Botanics to undertake a Level 2 Flora and Fauna Assessment (dated October 2023), included as **Appendix D** of this report.

As part of the LPS preparation viewsheds were prepared to protect the amenity along the Great Northern Highway and Chittering tourist way. Chittering Road is considered a part of the 'Tourist Way'; however, the subject land is located in an area between viewsheds and therefore further assessment of the potential visual impact is not required.

Notwithstanding the above, the development is proposed on the lower, flatter part of the land to further minimise any potential impact and setback approximately 200m from Chittering Road, with vegetation providing a visual buffer from the road.

4.3 State Planning Policy 3.7 – Planning in Bushfire Prone Areas

The objective of *State Planning Policy 3.7 - Planning in Bushfire Prone Areas* (SPP 3.7), is to implement effective, risk-based land use planning and development to preserve life and reduce the impact of bushfire on property and infrastructure.

Figure 5 demonstrates that the subject site, is wholly designated as bushfire prone under the Department of Fire and Emergency's Bushfire Prone mapping. Any application which results in the intensification of the land within a bushfire prone are requires a Bushfire assessment to be undertaken to identify the bushfire risk posed to future development opportunities on the site.

Section 5.5 of the *Guidelines for Planning in Bushfire Prone Areas*, indicates that development in tourism or recreational land use which involve visitors who are unfamiliar with the surroundings and/or where they present evacuation challenges are identified as *Vulnerable Land-uses*. Given the proposal of short stay accommodation, the development is considered to be a vulnerable land use, which requires the preparation of a Bushfire Emergency Plan (BEP) in addition to a Bushfire Management Plan (BMP).

Figure 5 Bushfire Prone Mapping

Given that Lot 28 has been identified as bushfire prone, *Bushfire Prone Planning* have been appointed to coordinate and prepare a Bushfire Management Plan (BMP) and Bushfire Emergency Plan (BEP). A copy of the BMP and associated BEP is attached at **Appendix C.**

The Bushfire Management Plan classifies the vegetation as Class A – Forrest, with existing cleared areas being excluded from the assessment. Following the implementation of an Asset Protection Zone (APZ) and supportive bushfire mitigation requirements, the report indicates that the proposed development is able to achieve a BAL-29 rating.

Whilst some clearing will be required to establish the APZ around the chalet accommodation, the landowners in conjunction with the bushfire consultants are intending to retain as much vegetation as possible, resorting to modification of the vegetation, rather than completely clearing the area.

As the existing internal access to the most distant external part of the proposed development is longer than 200m and is not a 'loop road', passing bays and a turn around area have been proposed in accordance with SPP 3.7 and the Guidelines for Planning in Bushfire Prone Areas, as identified on the Site Plan.

Additionally, two 60,000L water tanks will be designated exclusively on site for the purpose of fire fighting to the specifications and technical requirements of the Department of Fire and Emergency Services (DFES).

The BEP highlights the evacuation procedures and refuge locations onsite and offsite in the event that a bushfire occurs in proximity to or on the subject land. The landowners are open to the preference for the units to only be available to guests during the lower risk months of March to November should this be preferred by authorities.

Overall, the proposed development is in accordance with the requirements and objectives of SPP 3.7 and the *Guidelines for Planning in Bushfire Prone Areas*.

5 OTHER CONSIDERATIONS

5.1 Aboriginal Heritage

The subject land has not been identified to accommodate any significant Aboriginal Cultural heritage places. Additionally, there are no other significant heritage considerations identified over the site.

5.2 Access

Access to the proposed development is by way of an existing crossover to Chittering Road and the use of an existing driveway that provides access to the dwelling.

Internal driveways to the individual chalets are proposed in accordance with the Site Plan. The alignment of these tracks and clustering of the proposed development has been planned to minimise the impact to the vegetation on site.

Site lines on Chittering Road are considered safe and clear for the access and egress of vehicles at this location.

5.3 Servicing

5.3.1 Water

The subject site is not currently connected to any reticulated water services. The proposed development has the capacity to be serviced by on site water tanks which harvest rainfall from the roof catchment areas of the proposed. The required water storage area can be determined during the preparation for a building permit and address the relevant requirements of water provision in accordance with the proposed number of people and usage of the site.

5.3.2 Reticulated Sewer/Effluent Disposal

The subject land is not currently connected to any sewer services, and connecting the proposed development is not feasible or required. Accordingly, the proposed development seeks to install on-site effluent disposal system to support the wastewater component of the development. The subject site able to accommodate the disposal of effluent on site, as the site is greater than 4ha, and no further assessment is required under Section 4 of the Government Sewerage Policy.

Local Geotechnics were engaged to undertake a Site and Soil Evaluation (SSE) in support of the proposed development application to determine whether the proposed lot is capable of on-site effluent disposal, which included a field assessment undertaken on 04 September 2023.

The SSE recommended that sustainable onsite sewage management systems be installed to meet the needs of the proposed development. The landowners are interested in incorporating as many sustainable methods and products as they can and are therefore considering the use of compost toilets to service the proposed Chalets.

The SSE incorporated the potential use of compost toilets and determined that these could be suitable for the site, calculating the indicative Land Application Area (LAA) required for each chalet, which has been identified on the Site Plan. The final details and location will be determined as part of the formal applications with the Shire prior to installation.

A full copy of the Site and Soil Evaluation is included as **Appendix E** of this report.

5.3.3 Power and Telecommunications

The development is proposed to be 'off-grid' meaning that the site will be serviced through solar power in addition to the onsite water and sewer requirements.

6 CONCLUSION

The proposed development is considered to be consistent with the 'Agriculture Resources' zone and requirements of the Shire of Chittering Local Planning Scheme No.6 and Local Planning Strategy. The use of the subject land for a 'Short Stay' accommodation is considered to be capable of approval and is compliant with all the provisions within the LPS 6 and the applicable state planning framework.

Accordingly, Development Approval is respectfully sought for the proposed Short Stay development subject to advertising in accordance with the Planning and Development (Local Planning Scheme) Regulations 2015. Approval is sought and justified on the following grounds:

- The Short Stay Accommodation is capable of approval within the 'Agriculture Resources' zone under Local Planning Scheme No.6, subject to advertising;
- The proposed development has been designed to blend with the existing aesthetic of the land and have minimal visual impact on the surrounding road reserve, consistent with the requirements of the Special Control Area;
- Through the implementation of Asset Protection Zones around the proposed development and clustering of the development area, a rating of BAL-29 can be achieved, whilst minimising the potential impact to vegetation on site;
- The associated traffic generation by the proposed short stay accommodation is not considered to have significant impacts on the surrounding road network;
- All vehicle movements within the site are to be appropriately serviced by the internal access ways; and
- The proposed short stay accommodation is capable of being appropriately serviced in terms of the required power, water and effluent disposal.

On the basis of the description and rationale provided in this report, it is respectfully requested that the Shire of Chittering assess this application and approve the proposed Short Stay Accommodation development over Lot 28 (No. 2178) Chittering Road, Lower Chittering subject to advertising in accordance with the requirements of LPS 6, the Planning and Development (Local Planning Scheme) Regulations 2015.

Appendix A Certificate of Title

WESTERN AUSTRALIA

REGISTER NUMBER	
28/D77035	
DUPLICATE EDITION	DATE DUPLICATE ISSUED
2	24/6/2007

VOLUME 1897 FOLIO 730

RECORD OF CERTIFICATE OF TITLE

UNDER THE TRANSFER OF LAND ACT 1893

The person described in the first schedule is the registered proprietor of an estate in fee simple in the land described below subject to the reservations, conditions and depth limit contained in the original grant (if a grant issued) and to the limitations, interests, encumbrances and notifications shown in the second schedule.

BGRoberts

REGISTRAR OF TITLES

REGISTRAR OF TITLES WESTERN AUSTRALIA

LAND DESCRIPTION:

LOT 28 ON DIAGRAM 77035

REGISTERED PROPRIETOR:
(FIRST SCHEDULE)

COENRAAD HENDRIK MOLLER
ELANRI MOLLER
BOTH OF 2178 CHITTERING ROAD LOWER CHITTERING WA 6084
AS JOINT TENANTS

(T P374140) REGISTERED 1/12/2022

LIMITATIONS, INTERESTS, ENCUMBRANCES AND NOTIFICATIONS:
(SECOND SCHEDULE)

1. EXCEPT AND RESERVING METALS, MINERALS, GEMS AND MINERAL OIL SPECIFIED IN TRANSFER 13653/1928.
2. *P374141 MORTGAGE TO COMMONWEALTH BANK OF AUSTRALIA REGISTERED 1/12/2022.

Warning: A current search of the sketch of the land should be obtained where detail of position, dimensions or area of the lot is required.
* Any entries preceded by an asterisk may not appear on the current edition of the duplicate certificate of title.
Lot as described in the land description may be a lot or location.

----------END OF CERTIFICATE OF TITLE----------

STATEMENTS:

The statements set out below are not intended to be nor should they be relied on as substitutes for inspection of the land and the relevant documents or for local government, legal, surveying or other professional advice.

SKETCH OF LAND:	1897-730 (28/D77035)
PREVIOUS TITLE:	1897-729
PROPERTY STREET ADDRESS:	2178 CHITTERING RD, LOWER CHITTERING.
LOCAL GOVERNMENT AUTHORITY:	SHIRE OF CHITTERING

NOTE 1: DUPLICATE CERTIFICATE OF TITLE NOT ISSUED AS REQUESTED BY DEALING O314489

IT 37

ORIGINAL—NOT TO BE REMOVED FROM OFFICE OF

CT 1897 0730 F

Application E558402
Volume 1897 Folio 729

WESTERN AUSTRALIA

1897 730

CERTIFICATE OF TITLE

UNDER THE "TRANSFER OF LAND ACT, 1893" AS AMENDED

VOL. 1897 FOL. 730

Page 1 (of 2 pages)

I certify that the person described in the First Schedule hereto is the registered proprietor of the undermentioned estate in the undermentioned land subject to the easements and encumbrances shown in the Second Schedule hereto.

Dated 1st March, 1991

REGISTRAR OF TITLES

OFFICE OF TITLES WESTERN AUSTRALIA

ESTATE AND LAND REFERRED TO

Estate in fee simple in portion of Swan Location 1351 and being Lot 28 on Diagram 77035, delineated on the map in the Third Schedule hereto, except and reserving metals, minerals, gems and mineral oil as specified in Transfer 13653/1928.

FIRST SCHEDULE (continued overleaf)

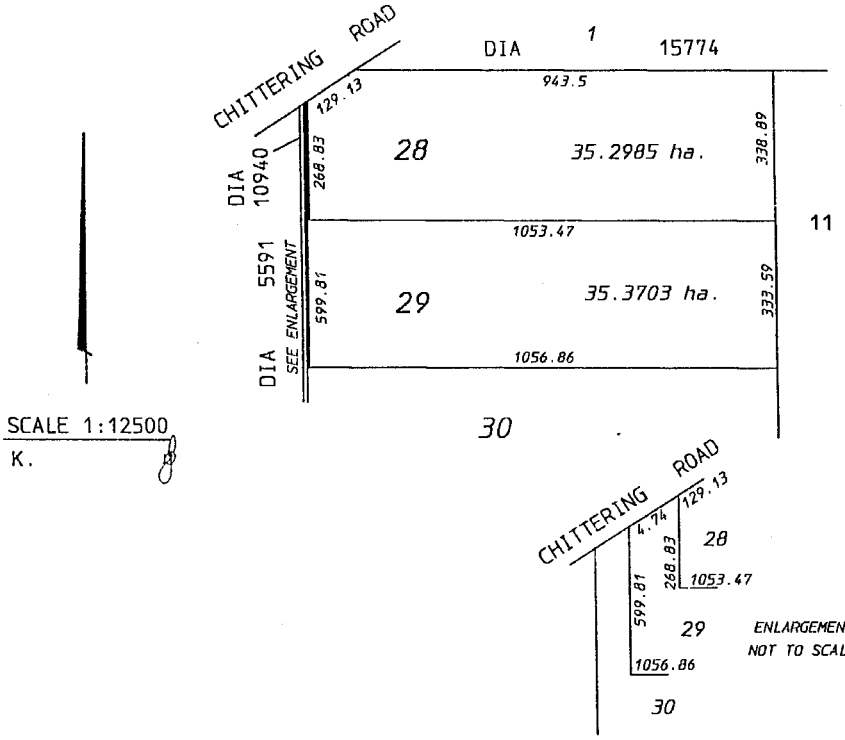
~~Biaco Pty. Ltd. of Level 1, 10 Kings Park Road, West Perth.~~

SECOND SCHEDULE (continued overleaf)

~~1. MORTGAGE E558404 to Home Building Society. Registered 1.3.91 at 15.48 hrs.~~

Discharged G256725 14.8.96

THIRD SCHEDULE



NOTE: ENTRIES MAY BE AFFECTED BY SUBSEQUENT ENDORSEMENTS.

E67590/3/89-20M-L/4664

PERSONS ARE CAUTIONED AGAINST ALTERING OR ADDING TO THIS CERTIFICATE OR ANY NOTIFICATION HEREON

LT. 37

FIRST SCHEDULE (continued) NOTE: ENTRIES MAY BE AFFECTED BY SUBSEQUENT ENDORSEMENTS

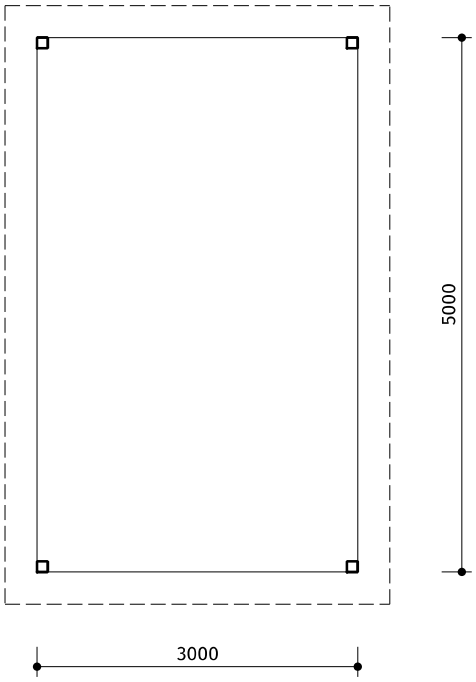
REGISTERED PROPRIETOR	INSTRUMENT NATURE	INSTRUMENT NUMBER	REGISTERED	TIME	SEAL	CERT. OFFICER
Randolph St. George Tyler and Karen Lynette Skinner both of 36 Hood Street, Sherwood, Brisbane, Queensland, as joint tenants.	Transfer	E558403	1.3.91	15.48		
Fleur Lee Crowe and Ronald Ian Witt both of 23 Squire Avenue, Heathridge, as tenants in common in equal shares.	Transfer	G256726	14.8.96	15.58		

SECOND SCHEDULE (continued) NOTE: ENTRIES MAY BE AFFECTED BY SUBSEQUENT ENDORSEMENTS

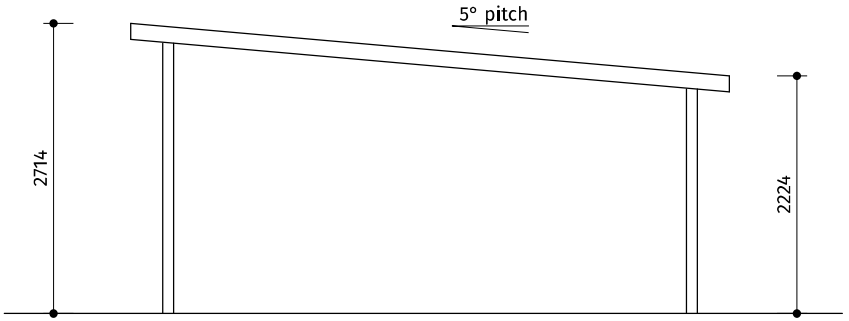
INSTRUMENT NATURE	INSTRUMENT NUMBER	PARTICULARS	REGISTERED	TIME	SEAL	CERT. OFFICER	CANCELLATION	NUMBER	REGISTERED OR LODGED	SEAL	CERT. OFFICER
Mortgage	G256727	to Energy Credit Union Ltd.	14.8.96	15.58							

CERTIFICATE OF TITLE VOL. 1897 FOL. 730

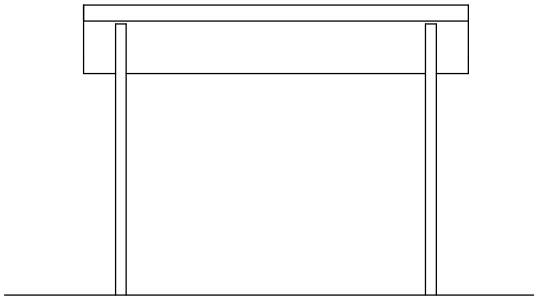
Appendix B Development Plans



FLOOR PLAN
1:50



SIDE ELEVATION
1:50



FRONT ELEVATION
1:50

CAR BAY PLAN & ELEVATION

Lot 28 (No. 2178) Chittering Road,
LOWER CHITTERING

Plan No.	23760-05
Date	03/10/23
Drawn	BdR
Checked	AR
Revision	A
Scale	1:50@A3

0 0.5m 1m 1.5m

BUNBURY OFFICE:
21 Spencer Street,
BUNBURY WA 6230
T: 08 9792 6000
E: bunbury@harleydykstra.com.au
W: www.harleydykstra.com.au

ALBANY | BUNBURY | BUSSELTON | FORRESTDALE | PERTH

NOTE: This plan has been prepared for planning purposes. Areas, Contours and Dimensions shown are subject to survey

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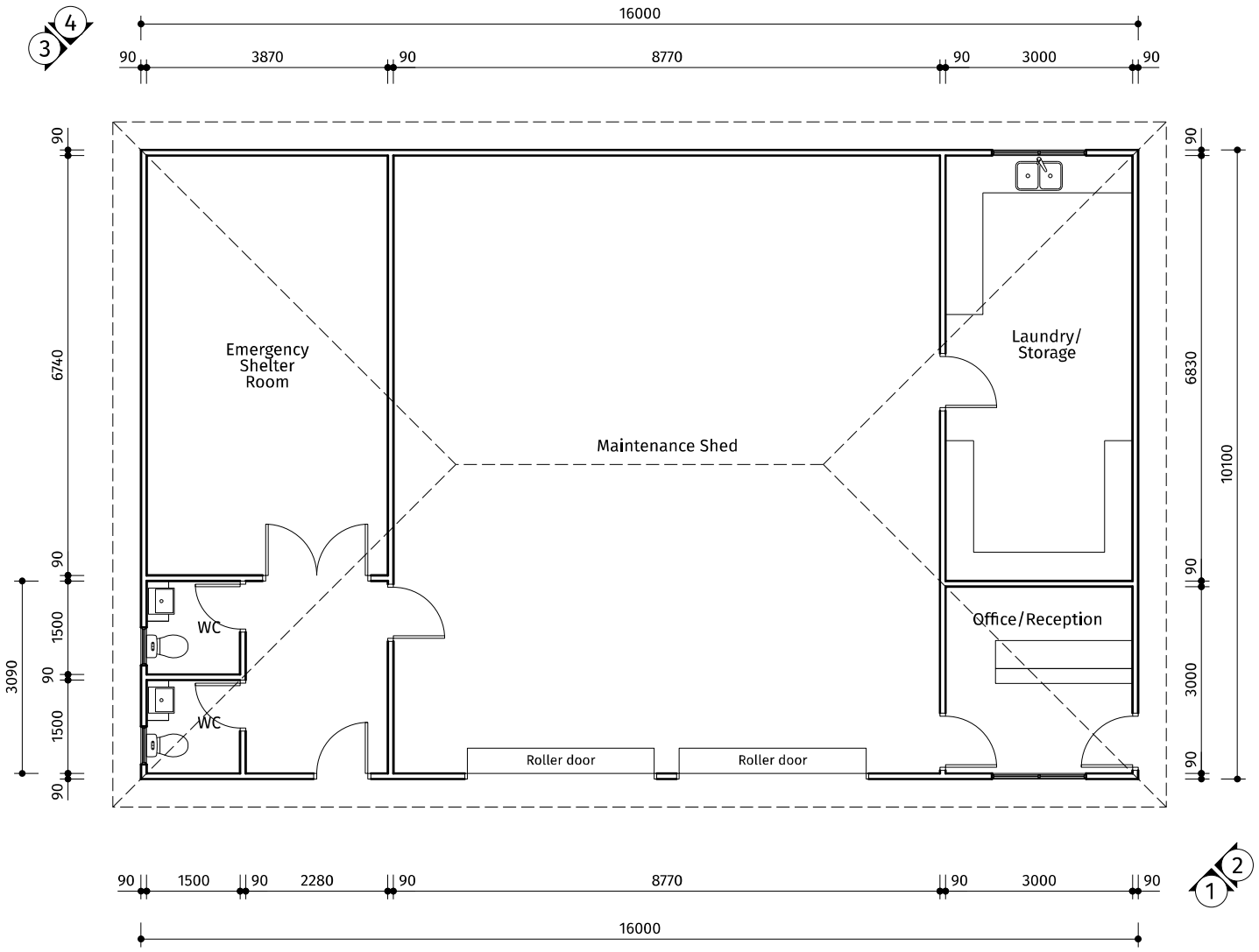

FLOOR PLAN
1:75

SHELTER FLOOR PLAN

Lot 28 (No. 2178) Chittering Road,
LOWER CHITTERING

Sheet 1 of 2

Plan No.	23760-03.1
Date	21/09/23
Drawn	BdR
Checked	AR
Revision	A
Scale	1:75@A3

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0 1m 2m

NOTE: This plan has been prepared for planning purposes. Areas, Contours and Dimensions shown are subject to survey

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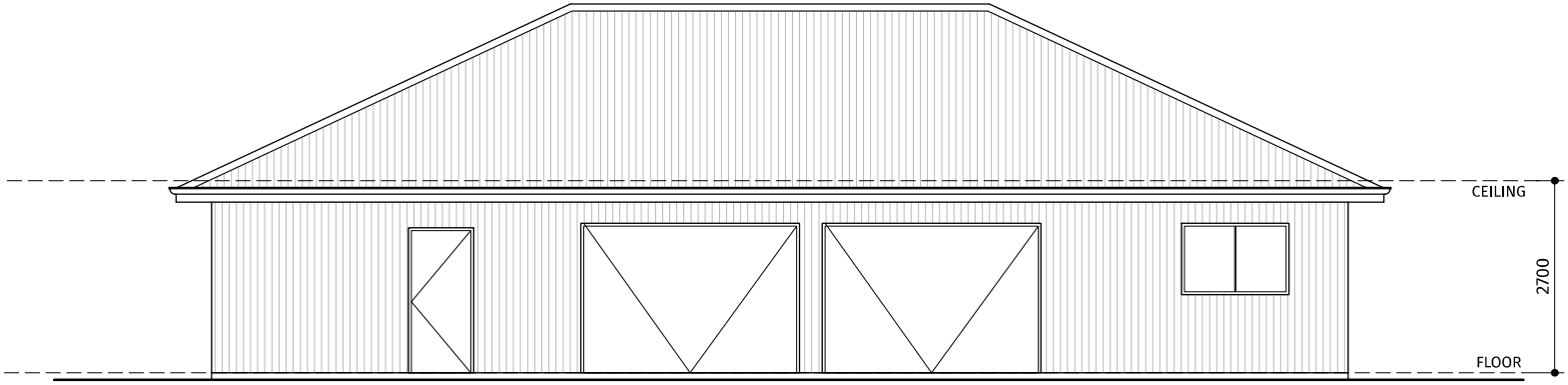
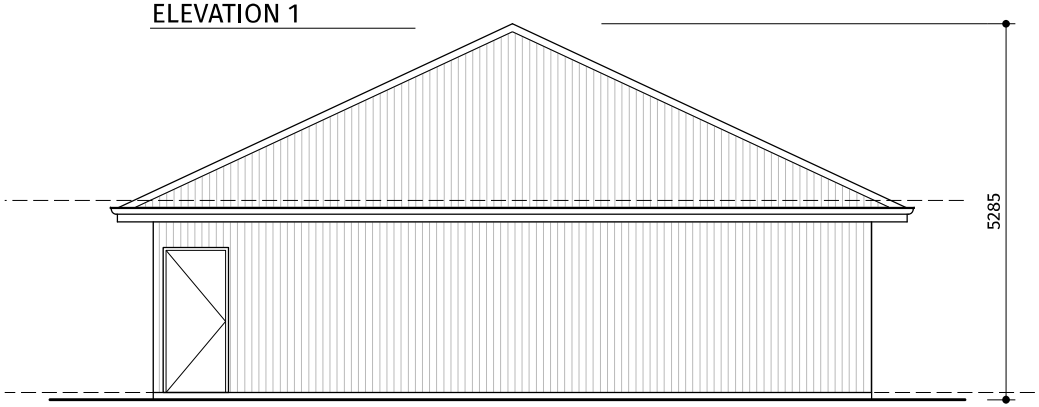


ELEVATION 1



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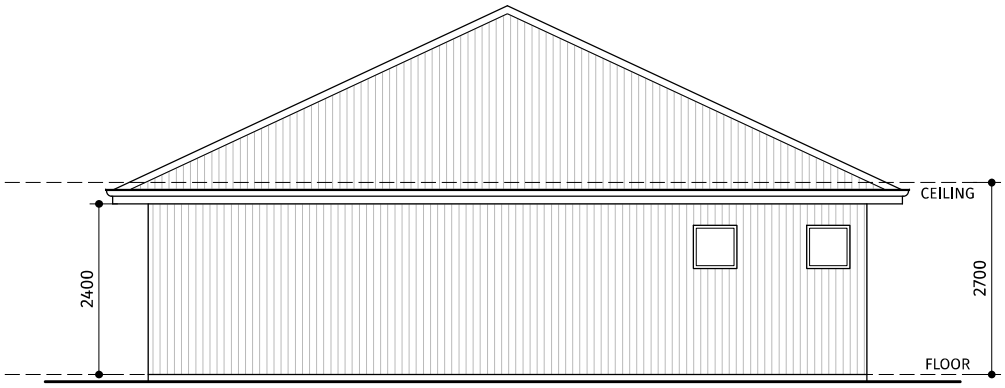

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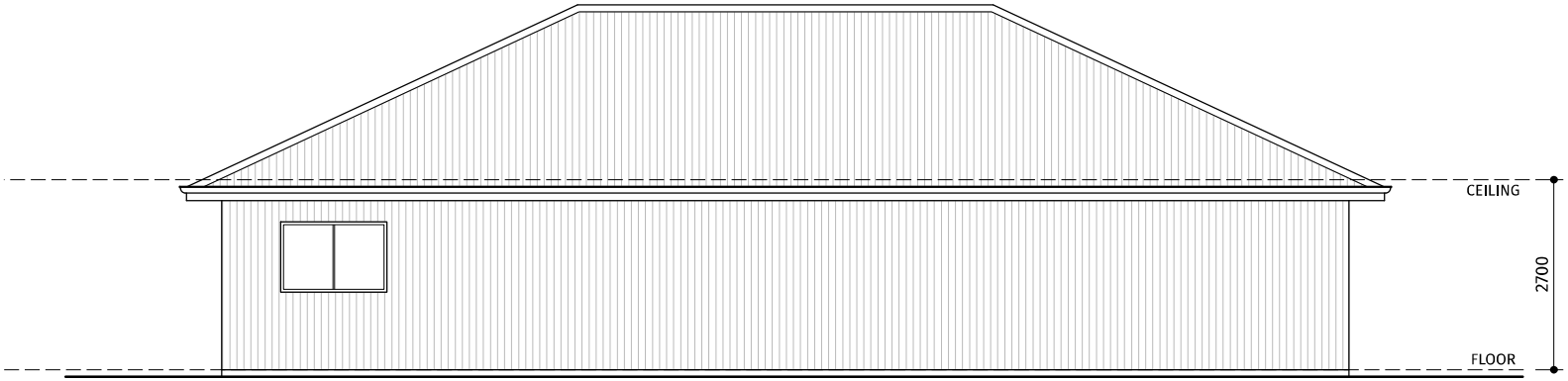

ELEVATION 4

SHELTER ELEVATIONS

Lot 28 (No. 2178) Chittering Road,
LOWER CHITTERING

Sheet 2 of 2

Plan No.	23760-03.2
Date	21/09/23
Drawn	BdR
Checked	AR
Revision	A
Scale	1:75@A3

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0 1m 2m

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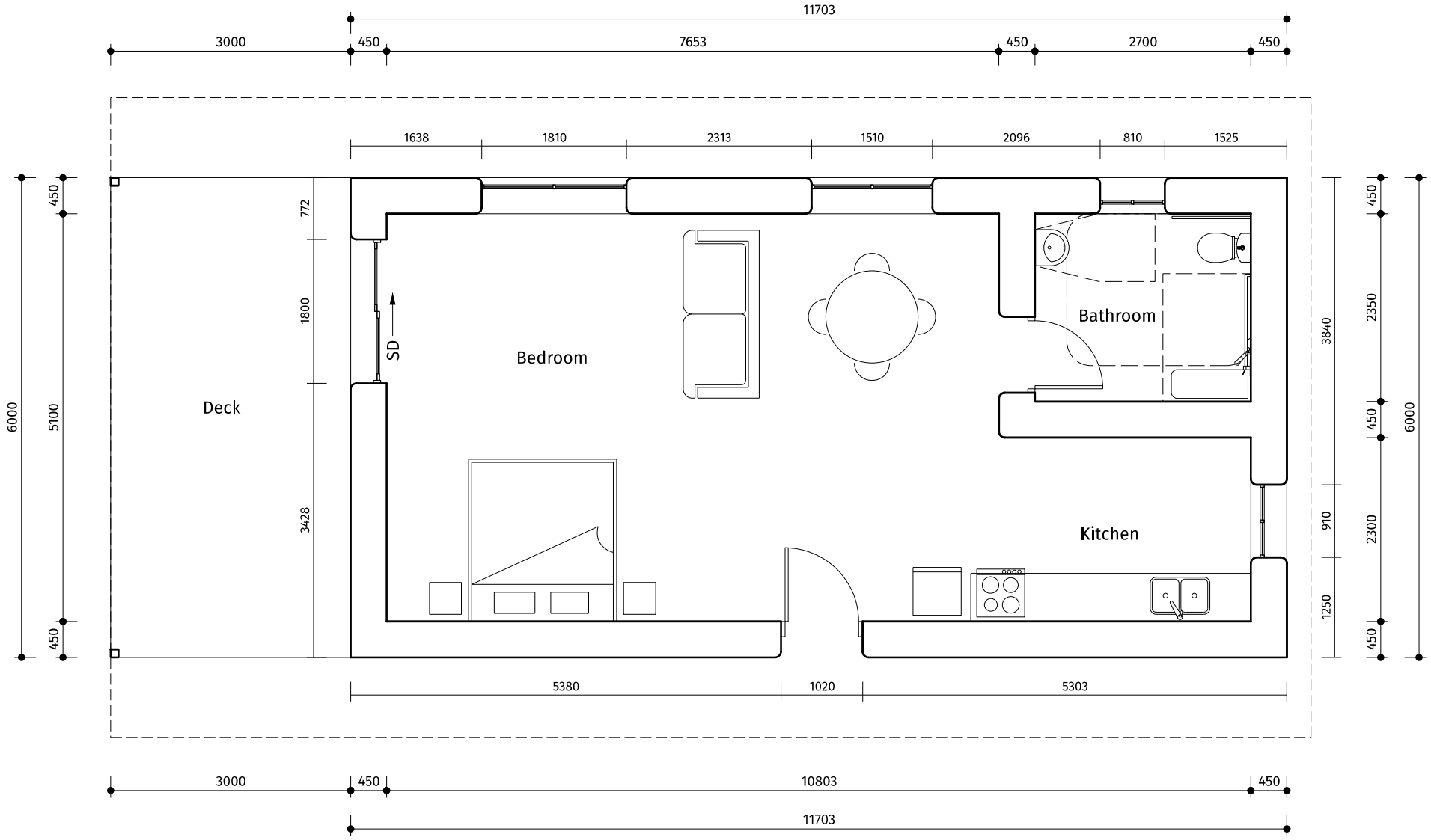

FLOOR PLAN
1:50

CABIN FLOOR PLAN - ACCESSIBLE UNIT

Lot 28 (No. 2178) Chittering Road,
LOWER CHITTERING

Plan No.	23760-03
Date	06/11/23
Drawn	BdR
Checked	AR
Revision	B
Scale	1:50@A3

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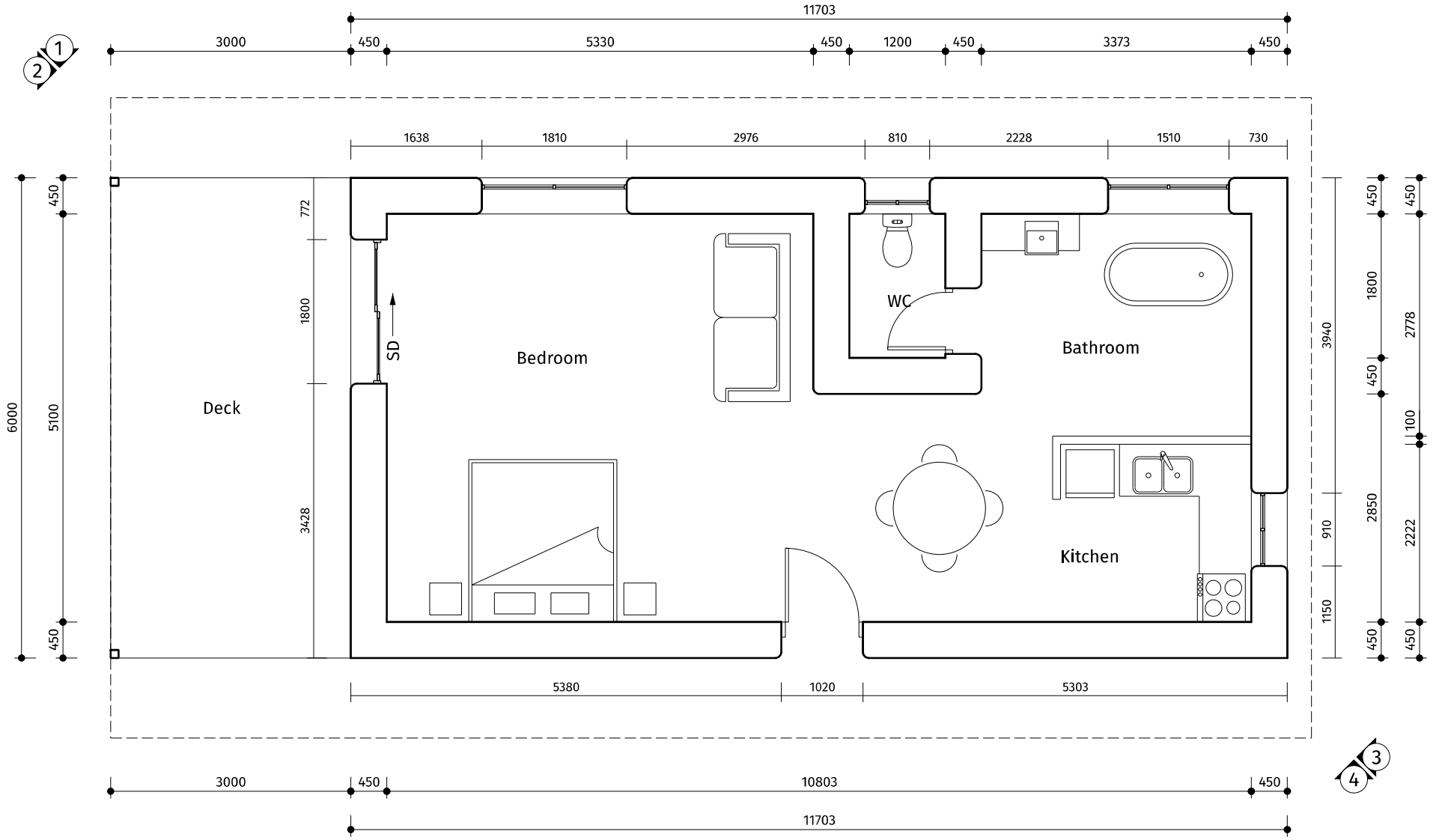

FLOOR PLAN
1:50

CABIN FLOOR PLAN

Lot 28 (No. 2178) Chittering Road,
LOWER CHITTERING

Sheet 1 of 2

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Date	06/11/23
Drawn	BdR
Checked	AR
Revision	C
Scale	1:50@A3

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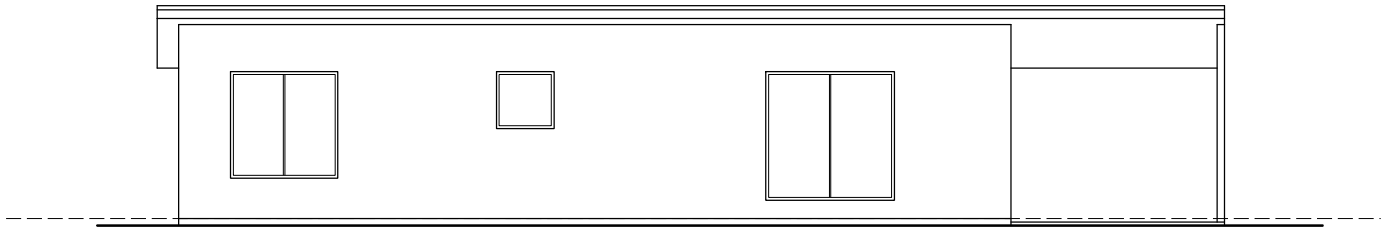

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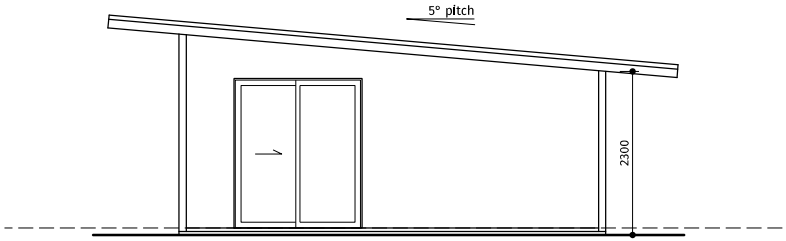

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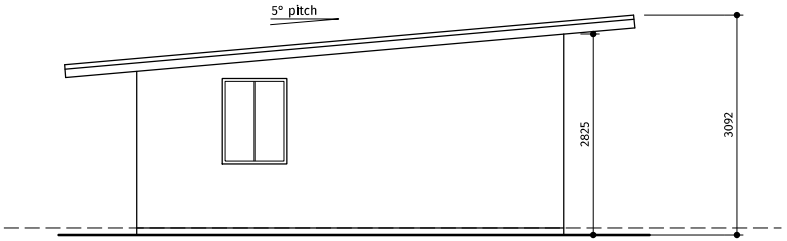

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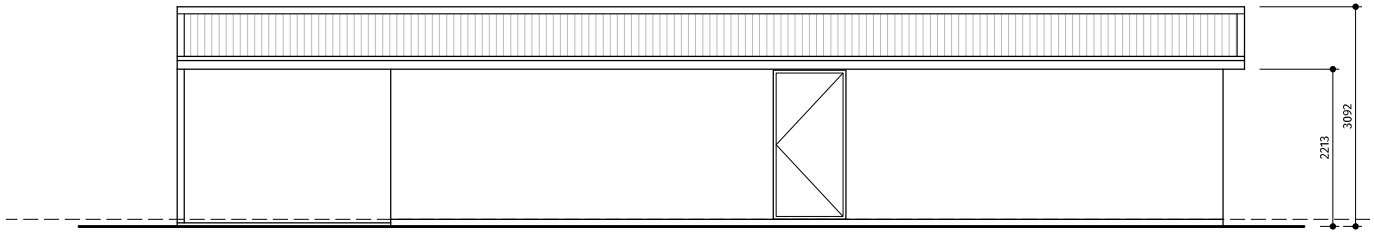

ELEVATION 4
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CABIN ELEVATIONS

Lot 28 (No. 2178) Chittering Road,
LOWER CHITTERING

Sheet 2 of 2

Plan No.	23760-02.2
Date	06/11/23
Drawn	BdR
Checked	AR
Revision	C
Scale	1:75@A3

0 1m 2m

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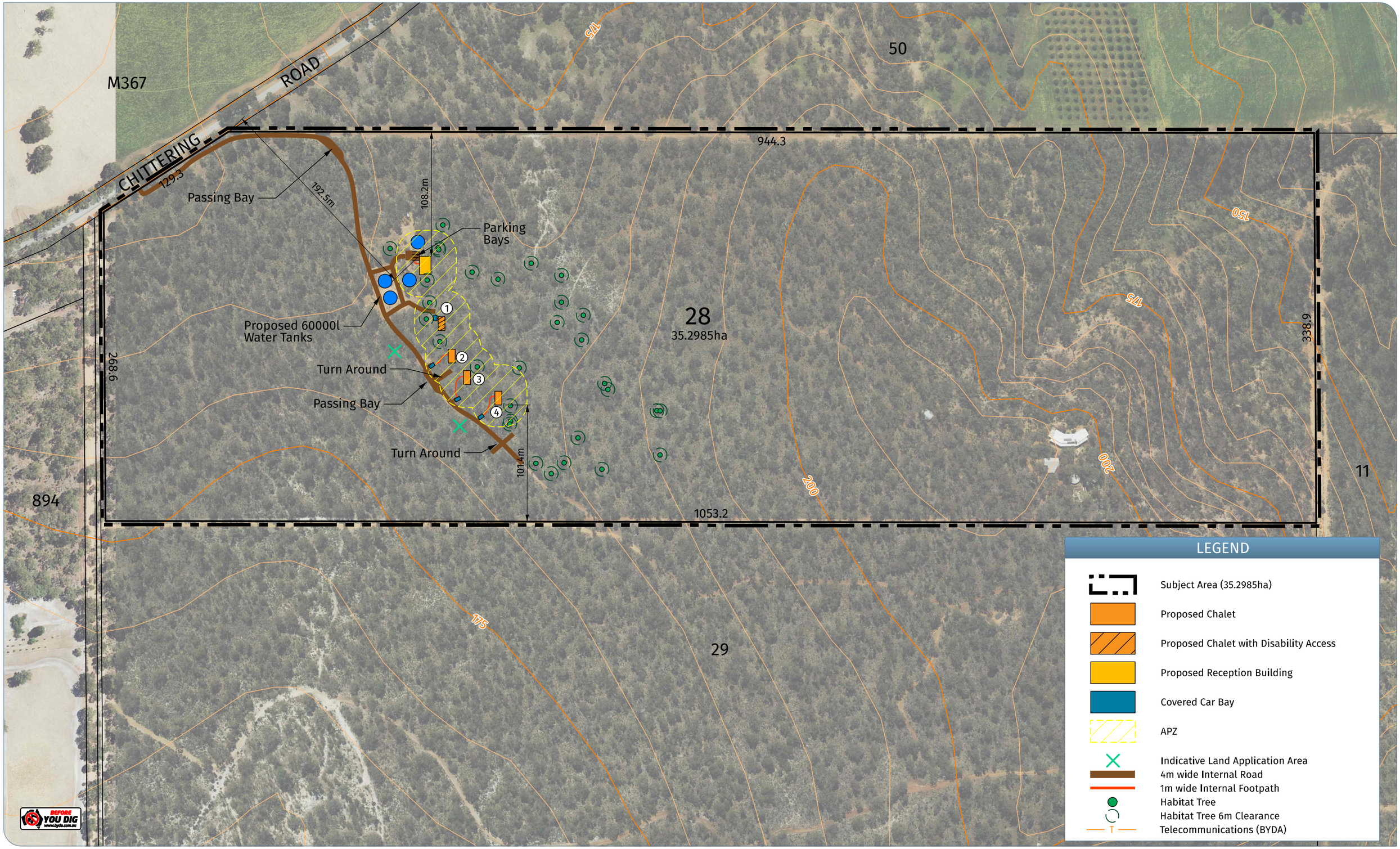

LEGEND

- Subject Area (35.2985ha)
- Proposed Chalet
- Proposed Chalet with Disability Access
- Proposed Reception Building
- Covered Car Bay
- APZ
- Indicative Land Application Area
- 4m wide Internal Road
- 1m wide Internal Footpath
- Habitat Tree
- Habitat Tree 6m Clearance
- Telecommunications (BYDA)

SITE PLAN

Lot 28 (No. 2178) Chittering Road, LOWER CHITTERING

Plan No.	23760-01	
Date	21/11/24	
Drawn	NP	
Checked	AR	
Revision	E	
Scale	1:3000@A3	0 40m 80m

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Appendix D Environmental Assessment

Detailed Flora and Vegetation Survey and Black Cockatoo Habitat Assessment

2178 Chittering Rd, Chittering

Prepared for: Conrad Moller

Prepared by: **Del Botanics**
PO Box 119
Mt Helena WA 6082
Email delbotanics@bigpond.com

December 2023

EXECUTIVE SUMMARY

This report has been prepared by Del Botanics on behalf of Conrad Moller to present the results of a spring Detailed Flora and Vegetation survey and Black Cockatoo Habitat Assessment within 2178 Chittering Rd, Chittering. The location of the site is shown on **Figures 1 & 2.**

The recent Flora and Vegetation Assessment undertaken in the area described above identified 104 flora species. The vegetation condition across the site ranges from "Degraded" to "Very Good".

One vegetation community was recorded at a local level during the survey. No species of Threatened (T), or Priority Flora or Threatened Ecological Communities (TEC's) pursuant to the *Biodiversity Conservation* (BC) Act 2016 or the *Environment Protection and Biodiversity Conservation* (EPBC) Act 1999 were located during the time of the survey.

Fifty-eight potential Black Cockatoo Habitat Trees were recorded on site. Forty-five of these trees have hollows, with twenty-five trees recorded with hollows suitable for Black Cockatoo's and 10 of these trees, have more than one suitable size hollow.

STATEMENT OF LIMITATIONS

This environmental report has been prepared in accordance with the scope of services set out in the original quotation. In preparing the report, Del Botanics has relied on data, surveys, analyses, designs, plans and other information provided by the Client and other individuals and organisations, most of which are referred to in the report. Del Botanics has not verified the accuracy or completeness of the data to the extent that the statements, opinions, facts, information, conclusions and/or recommendations in the report are based in whole or in part on the data, those conclusions are contingent upon the accuracy and completeness of the data. Del Botanics will not be liable in relation to incorrect conclusions should any data, information or condition be incorrect or have been concealed, withheld, unavailable, misrepresented or otherwise not fully disclosed.

In accordance with the scope of services, Del Botanics has relied on the data and have conducted environmental field monitoring in the preparation of the report. The nature and extent of monitoring conducted is described in the report. Within the limitations imposed by the scope of services, the monitoring and preparation of this report have been undertaken and performed in a professional manner, in accordance with generally accepted practices and using a degree of skill and care. No other warranty, express or implied, is made.

The report has been prepared for the benefit of the Client and for no other party. Del Botanics assumes no responsibility and will not be liable to any other person or organisation for or in relation to any matter dealt with or conclusions expressed in the report, or for any loss or damage suffered by any other person or organisation arising from matters dealt with or conclusions expressed in the report. Other parties should not rely upon the report or the accuracy or completeness of any conclusions and should make their own enquiries and obtain independent advice in relation to such matters.

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1. INTRODUCTION

1.1 BACKGROUND

This report has been prepared by Del Botanics on behalf of Conrad Moller to present the results of a spring Detailed Flora and Vegetation survey and Black Cockatoo Habitat Assessment within 2178 Chittering Rd, Chittering. The location of the site is shown on **Figures 1 & 2**.

The botanical survey of the flora species and vegetation was undertaken on 5th September 2023 and the Black Cockatoo Habitat Tree Assessment was undertaken on 15th September 2023. The site is approximately 75 kilometres north of the Perth central area.

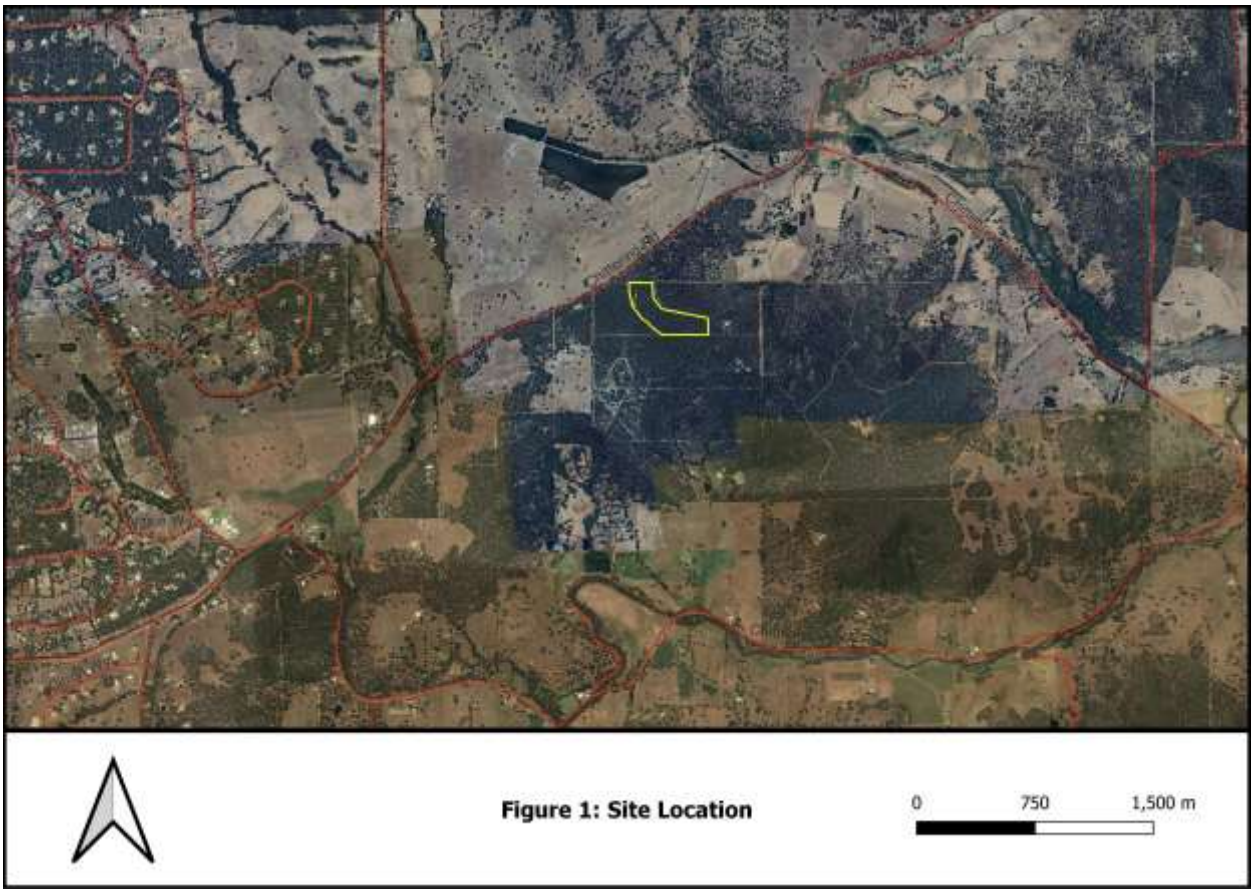

Figure 1: Site Location

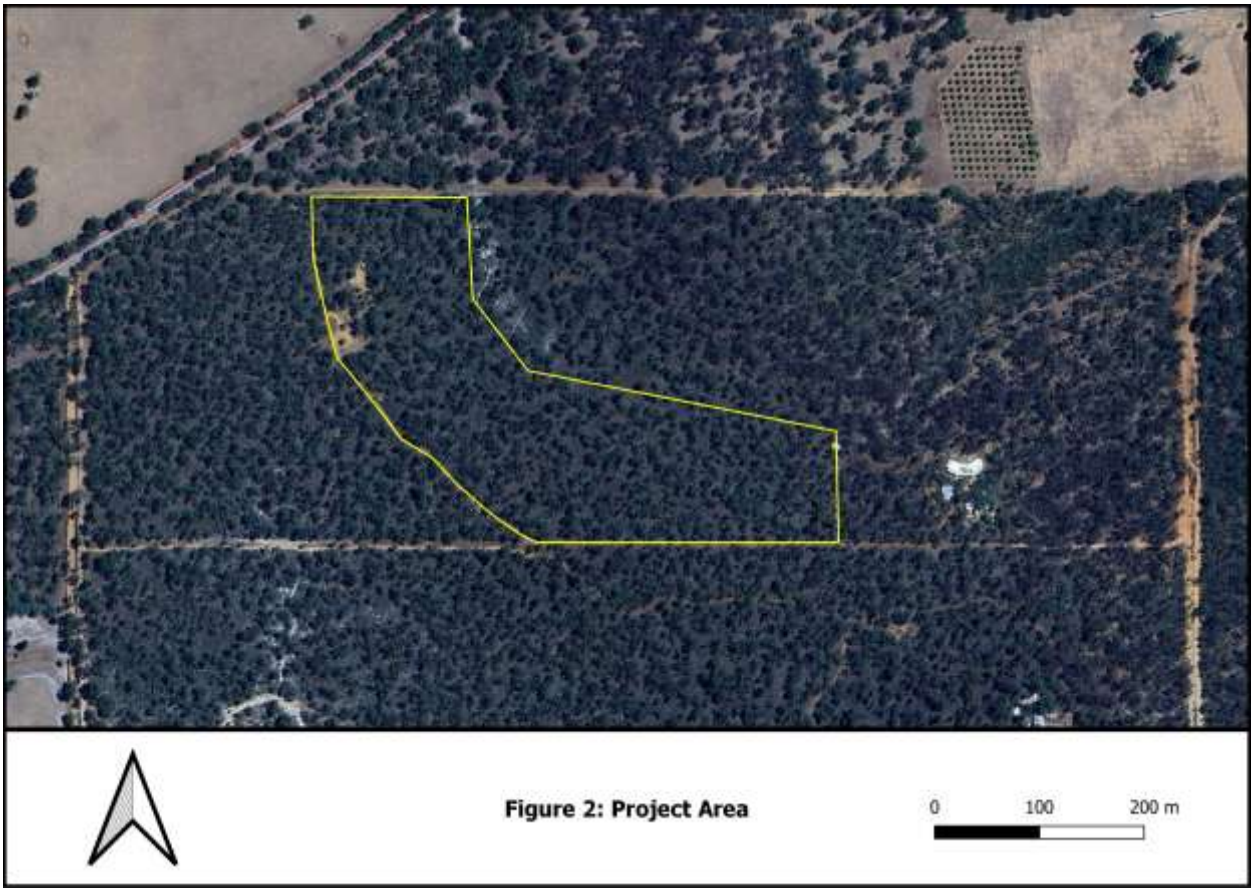

Figure 2: Project Area

1.2 PURPOSE OF THIS REPORT

This report was prepared to present the results of the flora and vegetation that occurs within the area described above. The flora species and vegetation were used to determine the significance of the site.

In summary this report provides:

- Threatened Flora (T) and Threatened Ecological Communities (TEC's) Department of Biodiversity, Conservation and Attractions (DBCA) and a Department of Agriculture, Water and the Environment (DAWE) Database search to determine results for the site;
- A spring botanical survey;
- An assessment of vegetation communities and conditions;
- A Black Cockatoo Habitat Assessment; and
- Black Cockatoo Habitat Assessment Results.

2. EXISTING ENVIRONMENT

2.1 LANDFORM, TOPOGRAPHY AND SOILS

Soil-landscape system mapping of Western Australia describes broad soil and landscape characteristics from regional to local scales. The survey area is within the Gabbla System.

The Gabbla System occurs on along the western boundary of the Darling Plateau to the east of the Dandaragan plateau. It is described as gentle to moderately slopes, consisting of yellow, red and grey loams and clays, with gravel common and sand pockets. *Eucalyptus wandoo* and *Eucalyptus loxophleba* commonly occur on the clay (Department of Agriculture and Food WA, 2012).

2.2 VEGETATION

The survey area lies in the Drummond Botanical Subdistrict within the Southwest Botanical Province as described by Beard (1990). Flora composition has been described by Beard (1990) as predominantly consisting of Banksia Low Woodlands on leached sands with Melaleuca swamps where ill drained and Woodlands of Eucalyptus spp. on less leached soils.

2.2.1 Regional vegetation

The Biogeographic Regionalisation of Australia (IBRA) divides Australia into 89 bioregions based on major biological and geographical/geological attributes. Western Australia has 26 biogeographic regions and 53 subregions based on dominant landscape characteristics of climate, lithology, geology, landform and vegetation. The study area is in the Northern Jarrah Forest (JAF01) subregion, part of the Jarrah Forest bioregion. This bioregion is characterised by Jarrah-Marri forest on laterite gravels in the west with Bullich and Blackbutt in valleys grading to Wandoo – Marri woodlands on clayey soils in the east. Extensive but localised sand sheets with low Banksia woodlands occur throughout, with heath being found on granite outcroppings particularly in northern and eastern extents (Williams and Mitchell 2001).

2.2.2 Vegetation Complex

The term vegetation complex describes the distribution of vegetation communities of the southwest forest region of Western Australia of pre-1750 distribution undertaken by Mattiske and Havel (1998). This was part of the biodiversity assessment for the comprehensive regional assessment for the southwest forest region.

Based on this mapping at a scale of 1:50,000, the Department of Primary Industries and Regional Development (DPIRD) has compiled a list of vegetation extent and types across WA. This mapping

suggests two vegetation complexes occurs within the survey area. Yalanbee (Y6) occurs across a majority of the site and consists of woodland of *Eucalyptus wandoo-Eucalyptus accedens*, less consistently open forest of *Eucalyptus marginata* subsp. *thalassica-Corymbia calophylla* on lateritic uplands and breakaway landscapes in arid and perarid zones. The second complex occurs in the eastern section of the site and consist of Murray 2 (My2). This complex contains open forest of *Eucalyptus marginata* subsp. *thalassica-Corymbia calophylla-Eucalyptus patens* and woodland of *Eucalyptus wandoo* with some *Eucalyptus accedens* on valley slopes to woodland of *Eucalyptus rudis-Melaleuca rhaphiophylla* on the valley floors in semiarid and arid zones.

2.3 CLIMATE

The closest Bureau of Meteorology (BoM) weather station is approximately 20.4 km north of the survey area in Gingin (Aero) (Site No.009178). The long-term mean minimum temperature for Gingin ranged from 6.5˚C in July and August to 17.0˚C in February between 1996 and 2023. The long-term mean maximum temperature ranged from 18.4˚C in July to 33.2˚C in January and February between 1996 to 2023 (Bureau of Meteorology, 2023).

The long-term annual average rainfall is 639.4 millimetres (mm) from 1991 to 2020 (Bureau of Meteorology, 2020). Data is show below on **Figure 3**.

The temperature recorded in September 2023 was within the normal climatic conditions historically recorded for this area. The rainfall recorded in September 2023 was 11.2mm less more than recorded in September 2022, however, was consistent with the annual average rainfall recorded between 2011 to 2023. These results overall would not have a significant impact on the flora recorded within the survey area.

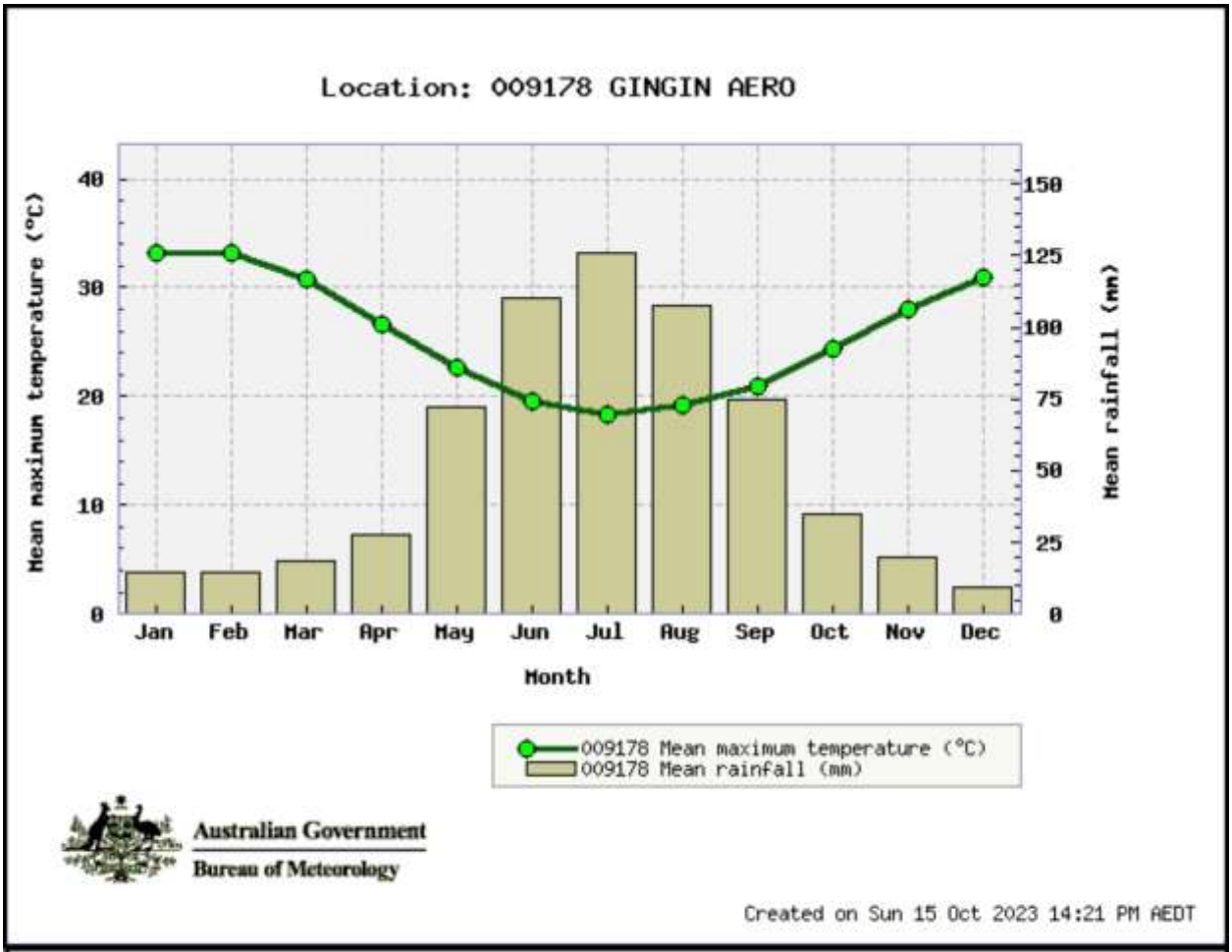

Figure 3: Weather Data

3. FLORA AND VEGETATION ASSESSMENT

3.1 VEGETATION METHODS

A Detailed Flora and Vegetation Survey was undertaken on the 9th September 2023. The site was surveyed for flora species including, Threatened Flora (T), Priority Flora (PF), potential areas of Threatened Ecological Communities (TEC's) and vegetation condition. Each variation or difference in vegetation was recorded with three 10 metre by 10 metre quadrats. Data was recorded to statistically determine vegetation communities and condition. In total, four quadrats were assembled to record each vegetation community. Each quadrat recorded flora species, heights, percentage cover and percentage dead and alive. Quadrats were not assembled permanently; quadrat data is available in **Appendix B.**

The survey methodology was undertaken in accordance with EPA Position Statement No.3: *Terrestrial Biological Surveys as an Element of Biodiversity Protection* and EPA Guidance Statement No. 51: *Terrestrial Flora and Vegetation Surveys for Environmental Impact Assessment in Western Australia.*

All plant specimens collected during the field survey were dried, pressed and then sorted in accordance with the requirements of the Western Australian State Herbarium. Identification of specimens occurred through comparison with named material and through the use of taxonomic keys.

The use of standard data collection forms ensured the data was collected in a systematic and consistent manner. At each quadrat the following information was recorded:

- Vegetation condition;
- Vegetation community;
- Flora species;
- Local disturbances;
- Topography;
- Soils; and
- Age since fire.

The vegetation communities occurring on this site were described in detail. Aerial photography was used to extrapolate and map plant communities in combination with running notes made during the course of the survey.

3.2 DECLARED RARE AND PRIORITY FLORA

Species of flora acquire “Threatened” “Presumed Extinct” or “Priority” conservation status where populations are restricted geographically or threatened by local processes.
The Department of Biodiversity, Conservation and Attractions (DBCA) recognise these threats and subsequently applies regulations towards population protection and species conservation. The DBCA enforces regulations under the *Biodiversity Conservation Act 2016* to conserve Threatened species and protect significant populations. Priority Flora species are potentially rare or threatened and are classified in order of threat. Threatened and Priority Flora category definitions are listed in **Table 1**.

The likelihood of each flora species and vegetation community occurring onsite is determined by background research on the known soil types, vegetation communities and flowering times of each species. This information together with botanical knowledge provides an informative result on whether the flora species is likely to occur on the site.

Table 1: Definition of Rare and Priority Flora Species (DEC 2012)

Conservation Code	Category
T	**Threatened Flora (Declared Rare Flora – Extant)**. Schedule 1 under the Wildlife Conservation Act 1950 Rare Flora Notice Taxa which have been adequately searched for and are deemed to be in the wild either rare, in danger of extinction, or otherwise in need of special protection, and have been gazetted as such **Threatened Flora (Schedule 1)are further ranked by the Department according to their level of threat using IUCN Red List criteria:** **CR**: Critically Endangered - considered to be facing an extremely high risk of extinction in the wild. **EN**: Endangered –considered to be facing a very high risk of extinction in the wild. **VU**: Vulnerable - considered to be facing a high risk of extinction in the wild
X	**Presumed Extinct Flora (Declared Rare Flora – Extinct)** Schedule 2 under the Wildlife Conservation Act 1950 Rare Flora Notice Taxa which have been adequately searched for and there is no reasonable doubt that the last individual has died, and have been gazetted as such.
P1	**Priority One: Poorly-known species** pecies that are known from one or a few collections or sight records (generally less than five), all on lands not managed for conservation, e.g. agricultural or pastoral lands, urban areas, Shire, Westrail and Main Roads WA road, gravel and soil reserves, and active mineral leases and under threat of habitat destruction or degradation. Species may be included if they are comparatively well known from one or more localities but do not meet adequacy of survey requirements and appear to be under immediate threat from known threatening processes
P2	**Priority Two: Poorly-known species** Species that are known from one or a few collections or sight records, some of which are on landsnot under imminent threat of habitat destruction or degradation, e.g. national parks, conservation parks, nature reserves, State forest, vacant Crown land, water reserves, etc. Species may be included if they are comparatively well known from one or more localities but do not meet adequacy of survey requirements and appear to be under threat from known threatening processes.
P3	**Priority Three: Poorly-known species** Species that are known from collections or sight records from several localities not under imminent threat, or from few but widespread localities with either large population size or significant remaining areas of apparently suitable habitat, much of it not under imminent threat. Species may be included if they are comparatively well known from several localities but do not meet adequacy of survey requirements and known threatening processes exist that could affect them.
P4	**Priority Four: Rare, Near Threatened and other species in need of monitoring** (a) Rare. Species that are considered to have been adequately surveyed, or for which sufficient knowledge is available, and that are considered not currently threatened or in need of special protection, but could be if present circumstances change. These species are usually represented on conservation lands. (b) Near Threatened. Species that are considered to have been adequately surveyed and that do not qualify for Conservation Dependent, but that are close to qualifying for Vulnerable. (c) Species that have been removed from the list of threatened species during the past five years for reasons other than taxonomy.
P5	**Priority Five: Conservation Dependent species** Species that are not threatened but are subject to a specific conservation program, the cessation of which would result in the species becoming threatened within five years

A search of the Department of Biodiversity, Conservation and Attractions (DBCA) NatureMap database identified twenty-five species of significance likely to occur within a 10km radius of the area. These species are listed in **Table 2** below.

Table 2: NatureMap listed species

Species Name	Conservation Status DBCA	EPBC	Likely to occur onsite	Survey undertaken in flowering time
Acacia anomala	T	VU	No	Yes
Acacia drummondii subsp. *affinis*	3		No	Yes
Adenanthos cygnorum subsp. *chamaephyton*	3		No	Yes
Anigozanthos humilis subsp. *chrysanthus*	4		No	Yes
Drosera paleacea	1		No	Yes
Drosera sewelliae	2		No	Yes
Eryngium pinnatifidum subsp. *umbraphilum*	2		Unknown	Unknown
Gastrolobium crispatum	1		No	Yes
Gastrolobium nudum	2		Yes	No
Grevillea althoferorum subsp. *fragilis*	T	CR	Unknown	Unknown
Grevillea candolleana	2		No	Yes
Grevillea corrugata	T	VU	Yes	Yes
Hibbertia glomerata subsp. *ginginensis*	2		No	Yes
Hypocalymma sylvestre	T	EN	Yes	Yes
Oxymyrrhine coronata	4		Unknown	Unknown
Stylidium squamellosum	2		No	Yes
Stylidium striatum	4		Yes	Yes
Synaphea grandis	4		No	Yes
Synaphea panhesya	1		Yes	Yes
Thelymitra pulcherrima	2		Unknown	Unknown
Thelymitra stellata	T	EN	Yes	Yes
Thelymitra variegata	2		Yes	Yes
Verticordia lindleyi subsp. *lindleyi*	4		No	No
Verticordia serrata var. *linearis*	3		No	Yes

3.2.1 Environment Protection and Biodiversity Conservation Act (1999) – Species level significance

The *Environment Protection and Biodiversity Conservation* (EPBC) *Act*, 1999, promotes the conservation of biodiversity by providing strong protection for plants at a species level. Section 178 and 179 provides the lists and categories of threatened species under the Act and is presented in **Table 3** below.

Table 3: Categories of Threatened Species (EPBC Act, Section 179, 1999)

1	**Extinct** A native species is eligible to be included in the extinct category at a particular time if, at that time, there is no reasonable doubt that the last member of the species has died.
2	**Extinct in the Wild** A native species is eligible to be included in the **extinct in the wild** category at a particular time if, at that time:(a) it is known only to survive in cultivation, in captivity or as a naturalised population well outside its past range; or (b) it has not been recorded in its known and/or expected habitat, at appropriate seasons, anywhere in its past range, despite exhaustive surveys over a time frame appropriate to its life cycle and form.
3	**Critically Endangered** A native species is eligible to be included in the critically endangered category at a particular time if, at that time, it is facing an extremely high risk of extinction in the wild in the immediate future, as determined in accordance with the prescribed criteria.
4	**Endangered** A native species is eligible to be included in the endangered category at a particular time if, at that time: (a) it is not critically endangered; and (b) it is facing a very high risk of extinction in the wild in the near future, as determined in accordance with the prescribed criteria.
5	**Vulnerable** A native species is eligible to be included in the vulnerable category at a particular time if, at that time: (a) it is not critically endangered or endangered; and (b) it is facing a high risk of extinction in the wild in the medium term future, as determined in accordance with the prescribed criteria..
6	**Conservation Dependant** A native species is eligible to be included in the conservation dependent category at a particular time if, at that time: (a) the species is the focus of a specific conservation program the cessation of which would result in the species becoming vulnerable, endangered or critically endangered; or (b) the following subparagraphs are satisfied: (i) the species is a species of fish; (ii) the species is the focus of a plan of management that provides for management actions necessary to stop the decline of, and support the recovery of, the species so that its chances of long term survival in nature are maximised; (iii) the plan of management is in force under a law of the Commonwealth or of a State or Territory; (iv) cessation of the plan of management would adversely affect the conservation status of the species.

A search using the Department of Climate Change, Energy, the Environmental and Water (DCCEEW) Protected Matters Tool was undertaken within a 10km radius of the site. The search result noted twenty-eight flora species of significance likely to occur in the area. Nineteen flora species have been listed as Endangered; seven species are listed as Vulnerable and two are recorded as Critically Endangered. These species are listed in **Table 4** below.

Table 4: DCCEEW Protected Matters listed flora species

Species Name	Conservation Code	Likely to occur onsite	Survey undertaken in flowering time
Acacia anomala	Vulnerable	No	Yes
Acacia aphylla	Vulnerable	No	Yes
Andersonia gracilis	Endangered	No	Yes
Anigozanthos viridis subsp. *terraspectans*	Vulnerable	No	Yes
Anthocercis gracilis	Vulnerable	No	No
Banksia mimica	Endangered	No	Yes
Caleana dixonii	Endangered (listed as *Paracaleana dixonii*)	No	Yes
Chamelaucium lullfitzii	Endangered (listed as *Chamelaucium* sp. Gingin (N.G.Marchant 6))	Unknown	Unknown
Conospermum densiflorum subsp. *unicephalatum*	Endangered	No	Yes
Darwinia carnea	Endangered	No	Yes
Darwinia foetida	Critically Endangered	Unknown	Unknown
Diplolaena andrewsii	Endangered	No	Yes
Diuris micrantha	Vulnerable	No	Yes
Diuris purdiei	Endangered	No	Yes
Eleocharis keigheryi	Vulnerable	No	Yes
Eucalyptus leprophloia	Endangered	No	Yes
Grevillea althoferorum	Endangered	No	Yes
Grevillea christineae	Endangered	No	Yes
Grevillea corrugata	Endangered	Yes	Yes
Grevillea curviloba	Endangered	No	Yes
Grevillea flexuosa	Vulnerable	No	Yes
Hypocalymma sylvestre	Endangered	Yes	Yes
Macarthuria keigheryi	Endangered	No	Yes
Melaleuca sciotostyla	Endangered	No	No
Synaphea sp. Fairbridge Farm	Critically Endangered	Yes	Yes
Thelymitra dedmaniarum	Endangered	No	No
Thelymitra stellata	Endangered	Yes	Yes

3.2.2 Department of Biodiversity, Conservation and Attractions (DBCA) Database Search

In addition to the background searches undertaken through the DBCA NatureMap and the DCCEEW Protected Matters searches, a Threatened and Priority flora search was undertaken through the DBCA. The search is undertaken on records from the Threatened and Priority Flora Database (TPFL) and the WA Herbarium database (WAHerb), which provides known locations of each species. The results are provided below in **Table 5**. The search was conducted within a 5km radial area from the central coordinate. No species listed were recorded during the site visit.

Table 5: DBCA Threatened and Priority Flora Search Results

Taxon	Conservation Status DBCA	EPBC	Likely to occur onsite	Survey undertaken in flowering time
Acacia anomala	T		No	Yes
Adenanthos cygnorum subsp. *chamaephyton*	3		No	Yes
Drosera sewelliae	2		No	Yes
Eryngium pinnatifidum subsp. *umbraphilum*	2		Unknown	Unknown
Gastrolobium nudum	2		Yes	No
Hibbertia glomerata subsp. *ginginensis*	2		No	Yes
Hypocalymma sylvestre	T		Yes	Yes
Oxymyrrhine coronata	4		Unknown	Unknown
Thelymitra stellata	T	EN	Yes	Yes

3.3 THREATENED ECOLOGICAL COMMUNITIES

In Western Australia Threatened Ecological Communities (TEC's) are assessed through a procedure coordinated by the DBCA and are assigned to one of the categories outlined below in **Table 6**. While they are not afforded direct statutory protection at a State level (unlike Threatened Flora under the *Biodiversity Conservation Act* 2016) their significance is acknowledged through other State environmental approval processes (i.e. Environmental Impact Assessment pursuant to Part IV of the *Environmental Protection Act* 1986). Scheduled TEC's are afforded statutory protection at a Federal level pursuant to the EPBC Act. The department has been identifying and listing threatened ecological communities since 1994 through the non-statutory process.

The Minister for Environment previously listed ecological communities as threatened through a non-statutory process if the community was presumed to be totally destroyed or at risk of becoming totally destroyed. The *Biodiversity Conservation Act 201*6 (BC Act) provides for the statutory listing of threatened ecological communities (TECs) by the Minister. The new legislation also describes statutory processes for preparing recovery plans for TECs, the registration of their critical habitat, and penalties for unauthorised modification of TECs.

The department has been identifying and listing TECs since 1994 through the non-statutory process. The WA Minister for Environment has endorsed 69 ecological communities as threatened in the following categories:

- 20 critically endangered
- 17 endangered
- 28 vulnerable
- 4 presumed totally destroyed.

25 of these are listed under the Commonwealth's *Environment Protection and Biodiversity Conservation Act 1999*. As at January 2019, an additional 393 ecological communities (community types and sub-types) with insufficient information available to be considered a TEC, or which are rare but not currently threatened, have been placed on the Priority list and referred to as priority ecological communities (PECs)**.**

Table 6: Categories of DBCA's Threatened Ecological Communities

PD	**Presumably Totally Destroyed** An ecological community that has been adequately searched for but for which no representative occurrences have been located.
CE	**Critically Endangered** An ecological community that has been adequately surveyed and is found to be facing an extremely high risk of total destruction in the immediate future.
E	**Endangered** An ecological community that has been adequately surveyed and is not critically endangered but is facing a very high risk of total destruction in the near future.
V	**Vulnerable** An ecological community that has been adequately surveyed and is not critically endangered or endangered but is facing a high risk of total destruction or significant modification in the medium to long-term future.

The EPBC Act provides for the strong protection of TEC's, which are listed under section 181 of the Act and are described as 'Critically Endangered', 'Endangered' or 'Vulnerable' under section 182. Schedules of protected TECs maintained pursuant to the EPBC Act are based on the same Floristic Community Type's (FCT's) as adopted by DBCA, however not all TEC's listed by the DBCA are scheduled under the EPBC Act.

The Department of Climate Change, Energy, the Environment and Water (DCCEEW) Protected Matters Report indicated there are three known Threatened Ecological Communities (TEC's) likely to occur within a 10km radius of the area.

It is unlikely that the listed TEC's will occur within the survey area due to the current vegetation communities, condition and the soil complexes recorded within the survey area, which do not support the listed TEC's.

Table 8: DCCEEW listed Threatened Ecological Communities

Species Name	Conservation Code	Likely to occur on site
Clay Pans of the Swan Coastal Plain	Critically Endangered	No
Banksia Woodlands of the Swan Coastal Plain ecological community	Endangered	No
Tuart (*Eucalyptus gomphocephala*) Woodlands and Forests of the Swan Coastal Plain ecological community	Critically Endangered	No

3.3.1 Department of Biodiversity, Conservation and Attractions (DBCA) Database Search

In addition to the background searches undertaken through the DCCEEW Protected Matters search a Threatened Ecological Community (TEC) search was undertaken through the DBCA. The search is undertaken on records from the DBCA, which provides known locations of TEC's. The results noted no known TEC's to occur within a 10km radial area from the central coordinate.

4. FLORA AND VEGETATION ASSESSMENT RESULTS

A total of 99 taxa, comprising of 28 families and 63 genera were recorded on site. A list of these species has been provided in **Appendix A**. Species representation was greatest among the Myrtaceae, Proteaceae and Stylidiaceae families.

4.1 INTRODUCED SPECIES

One introduced flora species was recorded on the site. This represents 1% of the total number of flora species recorded on site. **Ursinia anthemoides* is not listed as a Declared Pest species under the *Biosecurity and Agriculture Management Act* 2007 (BAM Act).

Table 9: Introduced Flora Recorded in the Survey Area

Taxa	Common Name	BAM Act
**Ursinia anthemoides*	Ursinia	Permitted – s11

4.2 THREATENED AND PRIORITY FLORA

No species of Threatened (T) or Priority Flora were recorded during the survey; No other flora, pursuant to the *Biodiversity Conservation* (BC) Act 2016 or the *Environment Protection and Biodiversity Conservation* (EPBC) Act 1999 and listed by the Department of Biodiversity, Conservation and Attractions (DBCA) were located during the time of the survey. The botanical survey was undertaken in spring to coincide with the majority of the flowering times of the threatened species.

4.3 THREATENED ECOLOGICAL COMMUNITIES

No Threatened Ecological Communities listed by Department of Agriculture, Water and the Environment (DAWE) or Department of Biodiversity, Conservation and Attractions (DBCA) were located during the time of the survey.

4.4 LOCAL VEGETATION COMMUNITIES

Vegetation structure recorded in each vegetation community is used to determine the coverage class as described below in **Table 10.** These vegetation structure classes are defined and used in the Technical Guidance – *Flora and Vegetation Surveys for Environmental Impact Assessment* (2016).

Table 10: Vegetation Structure Classes

Life Form/ Height Class	Canopy Cover (percentage)			
	100% - 70%	**70% - 30%**	**30% - 10%**	**10% - 2%**
Trees 10-30m Trees < 10m	Closed Forest Low Closed Forest	Open Forest Low Open Forest	Woodland Low Woodland	Open Woodland Low Open Woodland
Shrub Mallee	Closed Shrub Mallee	Shrub Mallee	Open Shrub Mallee	Very Open Shrub Mallee
Shrubs > 2m Shrubs 1-2m Shrubs <1m	Closed Tall Scrub Closed Heath Closed Low Heath	Tall Open Scrub Open Heath Open Low Heath	Tall Shrubland Shrubland Low Shrubland	Tall Open Shrubland Open Shrubland Low Open Shrubland
Grasses	Closed Grassland	Grassland	Open Grassland	Very Open Grassland
Herbs	Closed Herbland	Herbland	Open Herbland	Very Open Herbland
Sedges	Closed Sedgeland	Sedgeland	Open Sedgeland	Very Open Sedgeland

One vegetation community was represented on the site at a local level; which has been described below in **Table 11.** Photographic representations of the vegetation community are shown in the Quadrat data sheets in **Appendix B**. The vegetation community, conditions and quadrat locations are shown on **Figures 4 & 5.**

Table 11: Local Vegetation Communities Recorded within 1278 Chittering Rd, Chittering, September 2023.

Community Descriptions
Vegetation Community 1 –Jarrah Woodland
Open Forrest of *Eucalyptus marginata* subsp. *thalassica* with *Corymbia calophylla* over open tall shrubland of *Banksia sessilis* over shrubland of *Xanthorrhoea preissii, Hibbertia hypericoides* and *Bossiaea eriocarpa* over open herbland of *Patersonia occidentalis*.

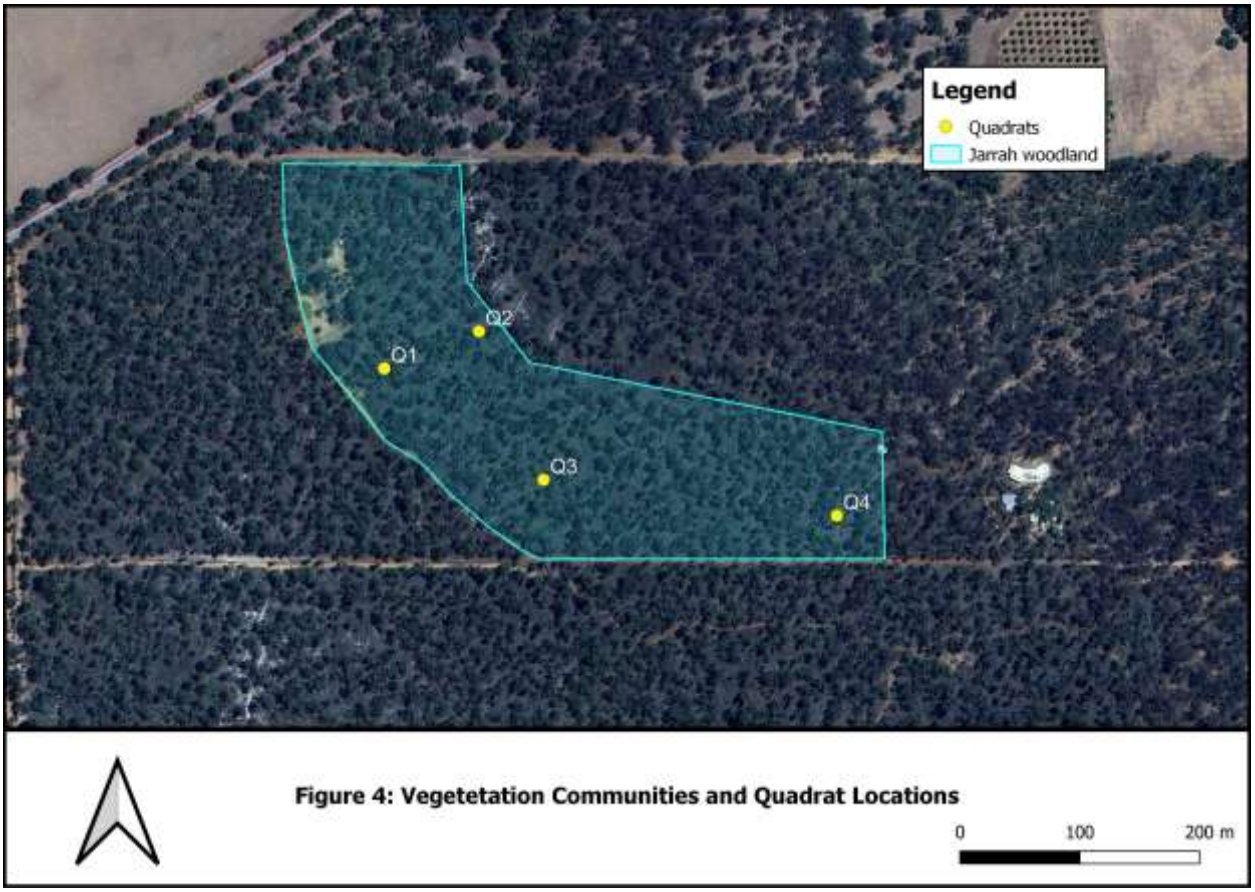

Figure 4: Vegetetation Communities and Quadrat Locations

4.5 VEGETATION CONDITION

Many bushland remnants have been historically degraded and current land use activities continue degradation and fragmentation processes. As a result, these remnants are especially susceptible to disturbances arising from indirect impacts such as surrounding developments and human activity. Degradation is caused by a wide range of factors, including isolation and edge effects, weed invasion, plant diseases, changes in fire frequency and behaviour, landscape fragmentation, increased predation on native fauna by feral animals, resulting in a decrease in species richness and general modification of ecological function.

The site has had minimal historic land disturbances, there are very low densities and diversities of weed species that are impacting the bushland that is currently in "Very Good" vegetation condition. The vegetation condition was rated according to the Vegetation Condition Scale used in the Technical Guidance – *Flora and Vegetation Surveys for Environmental Impact Assessment* (2016). The definitions are described in **Table 12** below.

Table 12: Vegetation Condition Scale

Vegetation Condition	South West and Interzone Botanical Provinces	Eremaean and Northern Botanical Provinces
Pristine	Pristine or nearly so, no obvious signs of disturbance or damage caused by human activities since European settlement.	
Excellent	Vegetation structure intact, disturbance affecting individual species and weeds are non-aggressive species. Damage to trees caused by fire, the presence of non-aggressive weeds and occasional vehicle tracks.	Pristine or nearly so, no obvious signs of damage caused by human activities since European settlement
Very Good	Vegetation structure altered, obvious signs of disturbance. Disturbance to vegetation structure caused by repeated fires, the presence of some more aggressive weeds, dieback, logging and grazing.	Some relatively slight signs of damage caused by human activities since European settlement. For example, some signs of damage to tree trunks caused by repeated fire, the presence of some relatively non-aggressive weeds, or occasional vehicle tracks
Good	Vegetation structure significantly altered by very obvious signs of multiple disturbances. Retains basic vegetation structure or ability to regenerate it. Disturbance to vegetation structure caused by very frequent fires, the presence of very aggressive weeds, partial clearing, dieback and grazing.	More obvious signs of damage caused by human activity since European settlement, including some obvious impact on the vegetation structure such as that caused by low levels of grazing or slightly aggressive weeds
Poor		Still retains basic vegetation structure or ability to regenerate it after very obvious impacts of human activities since European settlement, such as grazing, partial clearing, frequent fires or aggressive weeds
Degraded	Basic vegetation structure severely impacted by disturbance. Scope for regeneration but not to a state approaching good condition without intensive management. Disturbance to vegetation structure caused by very frequent fires, the presence of very aggressive weeds at high density, partial clearing, dieback and grazing.	Severely impacted by grazing, very frequent fires, clearing or a combination of these activities. Scope for some regeneration but not to a state approaching good condition without intensive management. Usually with a number of weed species present including very aggressive species.
Completely Degraded	The structure of the vegetation is no longer intact and the area is completely or almost completely without native species. These areas are often described as 'parkland cleared' with the flora comprising weed or crop species with isolated native trees and shrubs.	Areas that are completely or almost completely without native species in the structure of their vegetation; i.e. areas that are cleared or 'parkland cleared' with their flora comprising weed or crop species with isolated native trees or shrubs

In general, the vegetation condition varied from "Degraded" to "Very Good" in the study area.

Vegetation condition mapping is provided on **Figure 5.**

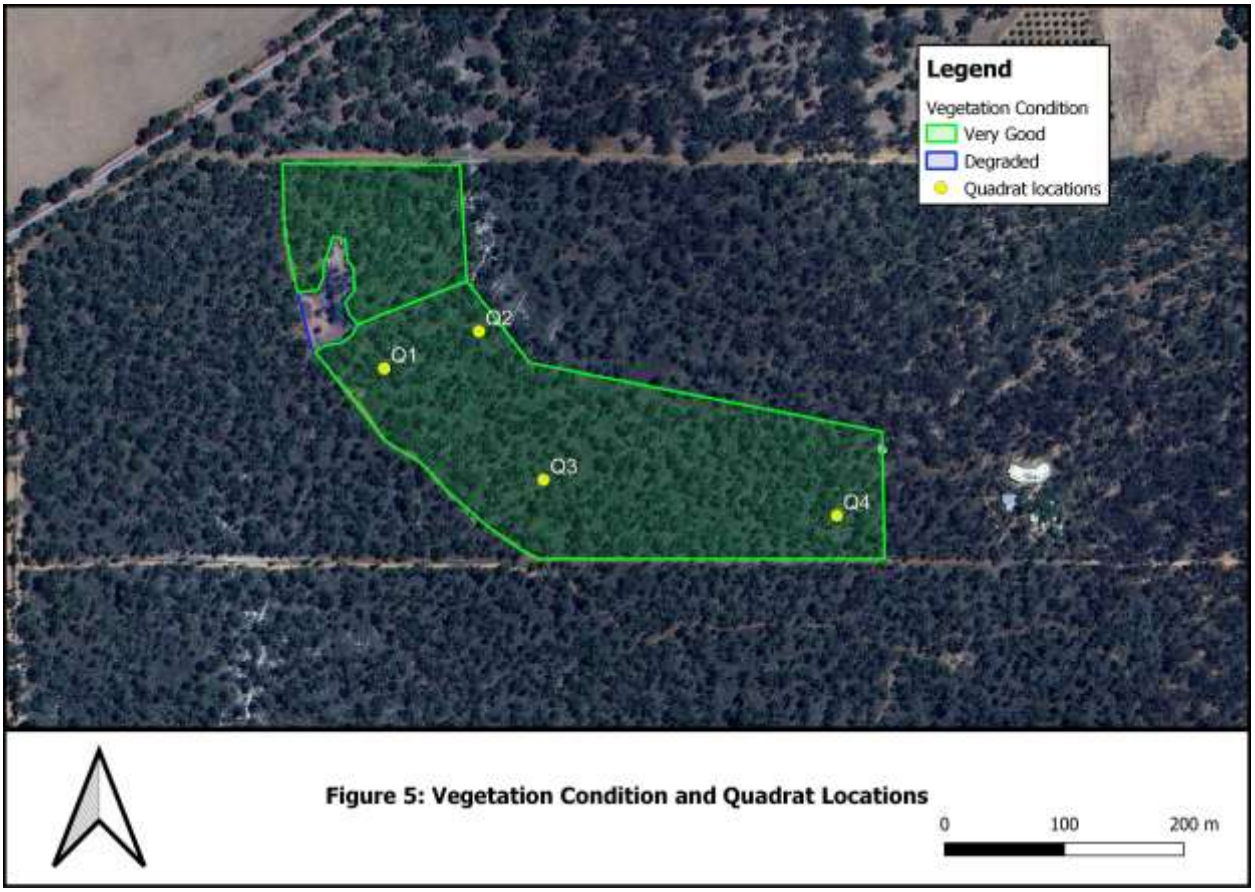

Figure 5: Vegetation Condition and Quadrat Locations

5. BLACK COCKATOO HABITAT ASSESSMENT

A Black Cockatoo Habitat Assessment was undertaken on the 15th September 2023. The Black Cockatoo Habitat Assessment recorded all potentially significant Black Cockatoo habitat trees with a DBH of >500mm for Jarrah and Marri and >300mm DBH for Wandoo within the survey area. The assessment includes categorising foraging habitat for the three WA Threatened Black Cockatoo species Carnaby's Cockatoo (*Zanda latirostris*), Baudin's Cockatoo (*Zanda baudinii*) and Forest Red-tailed Black-cockatoo (*Calyptorhynchus banksii naso*).

The following information was collected for each native tree species within the survey area, with a minimum DBH of 500 mm (300mm for Salmon gum and Wandoo).

- Tree number;
- Tree species;
- GPS Coordinates;
- DBH;
- Tree Health;
- Presence and size of hollows; and
- A photo of each tree.

A Black Cockatoo search of the Department of Biodiversity, Conservation and Attraction's Threatened and Priority Fauna Database, within a 20km radius was undertaken to determine the number of recorded breeding and roosting sites.

5.1 FORAGING, ROOSTING AND BREEDING HABITAT

The survey area lies within the Jarrah Forest IBRA region. This region is mapped within the breeding range for all 3 southwest Black Cockatoo species. This region is characterised by Jarrah and Marri forest, with Marri-Wandoo woodlands towards the eastern edge. This is the main area used by Baudin's Cockatoo and the Forest Red-tailed Black-cockatoo for breeding. Baudin's Cockatoo has key foraging and wintering areas in this region. Marri is a primary foraging species for Baudin's Cockatoo and the Forest Red-tailed Black- cockatoo. The following information was recorded from the survey area.

- **Breeding Trees** – DCBA records confirmed 10 breeding trees within a 12km radius.
- **Suitable Nesting Trees** –25 trees with suitable size hollows were recorded in the survey area.

- **Potential Nesting Trees** – 58 trees with suitable DBH were recorded in the survey area.
- **Night Roosting Trees** – There were no recorded Roosting trees within the survey area, however there are a high number of tall trees suitable for Potential Roosting Trees. DBCA data confirms known roosting sites within 8km of the survey area.
- **Foraging Trees** –The survey area consists of Marri, Jarrah and Wandoo.
- **Foliage cover** – Quadrats recorded Marri foliage coverage of 7-15% with other trees, including Jarrah and Wandoo making up 5-65%. Understorey species including *Banksia sessilis* and Hakea contribute to foliage cover of 5- 20% within each quadrat. The foliage within the survey area is of high value will very few disturbances.

Suitable nesting trees and foraging species have been recorded onsite. DBCA data confirms known locations of breeding trees within 5km of the site survey area. It is highly likely that the habitat within the area would be suitable for breeding.

5.1.1 Foraging

The survey area includes approximately 5ha of high-quality forage habitat with a score of 10 for all 3 WA threatened Black Cockatoo species in accordance with the foraging quality scoring tool in the Referral Guideline for 3 WA Threatened Black Cockatoo Species.

The survey area is dominated by Jarrah- Marri Woodland and includes Banksia and Hakea spp. in the understorey.

During the survey both Baudin's Cockatoo and Forest Red-tailed Black- cockatoo were observed and evidence of forging was recorded from both species.

Quadrats recorded Marri foliage coverage of 7-15% with other trees, including Jarrah and Wandoo making up 5-65%. Understorey species including *Banksia sessilis* and Hakea spp. contribute to foliage cover of 5- 20% within each quadrat. The foliage within the survey area is of high value will very few disturbances.

The survey area is within 8km of the Avon Valley National Park, which provides suitable forage for the 3 Black Cockatoo species.

5.1.2 Roosting

Baudin's and Carnaby's most often use night roosts in or near riparian environments or near to other permanent water sources. The survey area lacks riparian areas and permanent water sources, however water is available approximately 2km from the survey area. The most likely species to roost in this environment therefore is Forest Red tail Black Cockatoos which utilise tall Jarrah and Marri, among other species. No signs of roosting were recorded during the survey, no field observations of piles of pruned branches, feathers or droppings were recorded.

The DBCA Fauna database search identified known roosting sites within 8km from the survey area.

5.1.3 Breeding

Hollows form as trees age, over time, the trees are subject to various natural forces such as fire or storm that cause injury to the protective bark. While the living, outer sapwood may remain healthy, wood-rotting fungi and termites gain access to the heartwood, beginning the decay process. In Western Australia, fire often contributes to the initial cause of injury, as well as, by burning decayed wood, enlarging existing hollows. Wildlife can also renovate hollows using beaks, teeth or claws. Only old trees have hollows.

Research has shown that Jarrah, Wandoo and Salmon Gum rarely form hollows before they are 120-150 years of age. A hollow large enough for a black cockatoo (which requires an entrance hole 25cm in diameter) will only be found in a tree that is even older than that (CALM, 2005).

The size of the tree (measured as the diameter at breast height) can be a useful indication of the hollow-bearing potential of the tree. Habitat trees are recorded with a diameter at breast height (DBH) of 500 mm (for salmon gum and wandoo, suitable DBH is 300 mm). Each tree within the survey area was recorded with a GPS location and information was collected for each individual tree. Tree locations are shown on **Figure 6** and information is provided in **Appendix C**.

Fifty-eight Potential Black Cockatoo Habitat Trees were recorded on site with a DBH of 500mm or greater, consisting of thirty-seven Jarrah (*Eucalyptus marginata*) and fourteen Marri (*Corymbia calophylla*), five Powderbark (*Eucalyptus accedens*) and two Wandoo (*Eucalyptus wandoo*). Forty-five of these trees have hollows, with twenty-five trees recorded with hollows Suitable for Black Cockatoo's breeding. Ten of these have more than one suitable size hollow. No signs of use of hollows by Black Cockatoos was noted.

The DBCA Fauna database search identified 10 known breeding sites within a 5km radius from the survey area.

5.1.4 Impact Assessment

Any loss of, and impact upon known, suitable or potential nesting trees, and the habitat around these trees is highly likely to require a referral to the Minister.

Loss of greater than or equal to 1 ha of foraging habitat scoring 5-10 using the foraging quality scoring tool is likely to require referral to the Minister.

The survey area includes approximately 5ha of high-quality forage habitat with a score of 10 and 45 suitable nesting trees, with 25 providing potential nesting trees. If the vegetation and/or trees will be removed or damaged within the survey area, a referral will be required.

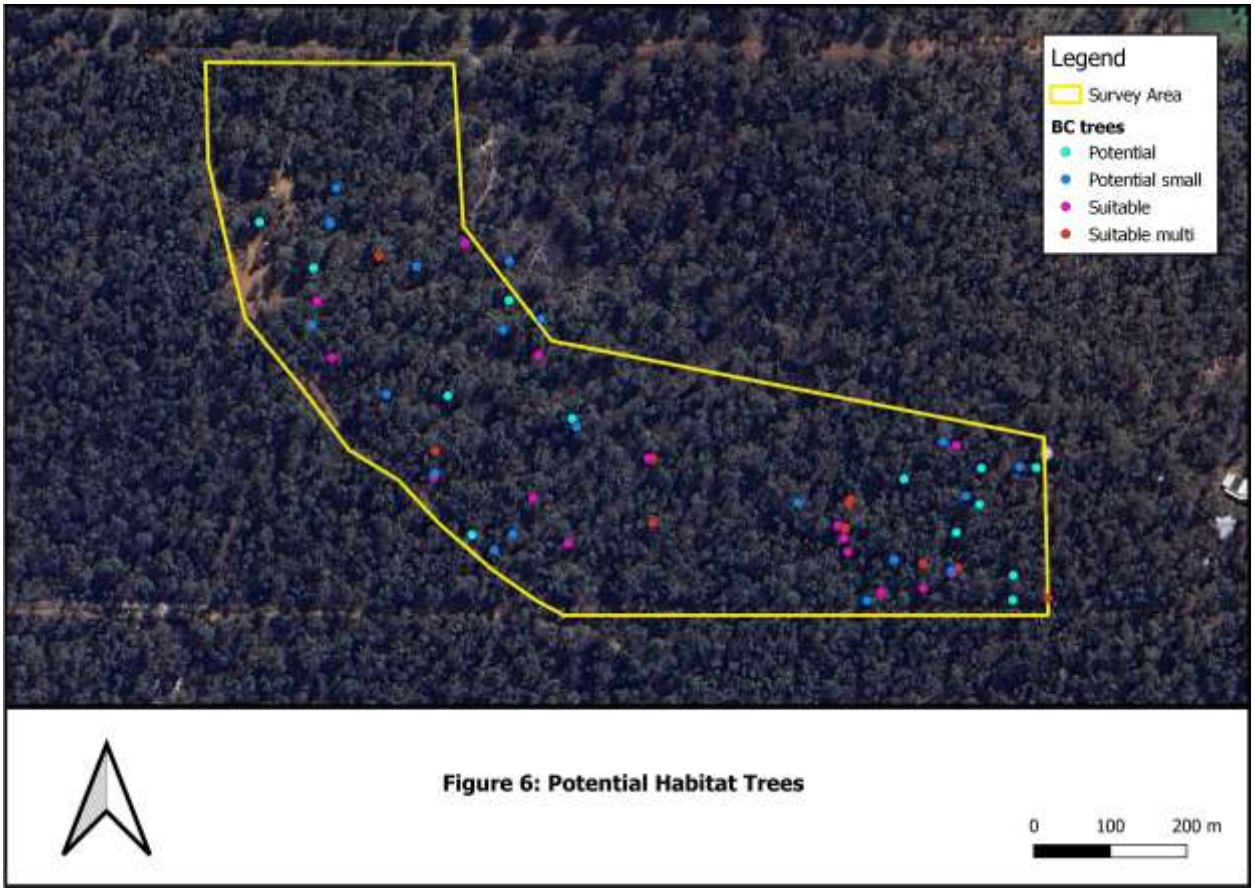

Figure 6: Potential Habitat Trees

6. CONCLUSIONS AND RECOMMENDATIONS

The Detailed Flora and Vegetation survey and Black Cockatoo Potential Habitat Assessment at 2178 Chittering Rd, Chittering, identified a total of 99 taxa representing 63 genera and 28 families. Weeds species comprised of 1% of the total flora recorded. The vegetation condition across the site ranged from "Degraded" to "Very Good".

One vegetation community was recorded at a local level during the survey. Vegetation consisted Open Forrest of *Eucalyptus marginata* subsp. *thalassica* with *Corymbia calophylla* over open tall shrubland of *Banksia sessilis* over shrubland of *Xanthorrhoea preissii, Hibbertia hypericoides* and *Bossiaea eriocarpa* over open herbland of *Patersonia occidentalis*. This community is consistent with the vegetation previously described for the area with the previously mapped Yalanbee (Y6) woodland of *Eucalyptus wandoo-Eucalyptus accedens*, and open forest of *Eucalyptus marginata subsp. thalassica-Corymbia calophylla* on lateritic uplands and breakaway landscapes vegetation complex (Heddle et al. 1980). These similarities include species composition (Jarrah [*Eucalyptus marginata*] and Marri [*Corymbia calophylla*]) and structure (forest). The recorded vegetation community also is consistent with the vegetation previously described for the area with the vegetation complex Murray 2 (My2) -open forest of *Eucalyptus marginata subsp. thalassica-Corymbia calophylla-Eucalyptus patens* and woodland of *Eucalyptus wandoo* with some *Eucalyptus accedens* on valley slopes to woodland of *Eucalyptus rudis-Melaleuca rhaphiophylla* on the valley floors in semiarid and arid zones. (Heddle et al. 1980). These similarities include species composition (Jarrah [*Eucalyptus marginata*] and Marri [*Corymbia calophylla*]) and *Eucalyptus wandoo* with some *Eucalyptus accedens* on valley slopes structure (forest).

No species of Threatened (T), or Priority Flora pursuant to pursuant to the *Biodiversity Conservation* (BC) Act 2016 or the *Environment Protection and Biodiversity Conservation* (EPBC) Act 1999 were located during the time of the survey. No Threatened Ecological Communities listed by the Department of Climate Change, Energy, the Environment and Water (DCCEEW) or Department of Biodiversity, Conservation and Attractions (DBCA) were located during the time of the survey.

Fifty-eight potential Black Cockatoo Habitat Trees were recorded on site. Forty-five of these trees have hollows, with twenty-five trees recorded with hollows suitable for Black Cockatoo's and 10 of these have more than one suitable size hollow.

Based on the results of this survey, Del Botanics proposes the following recommendations:

- Where possible retain all trees with a DBH greater than 500mm;
- Where possible retain vegetation in Good or better condition; and
- Encourage best practice weed management.

7. REFERENCES

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APPENDIX A
VASCULAR PLANT SPECIES RECORDED

APPENDIX A:
VASCULAR PLANT SPECIES RECORDED AT 2178 CHITTERING RD, CHITTERING, SEPTEMBER 2023
*(*Denotes a weed species)*

Family	Genus/Species
Amaranthaceae	*Ptilotus manglesii*
Apiaceae	*Daucus glochidiatus*
Apiaceae	*Xanthosia huegelii*
Asparagaceae	*Lomandra ? purpurea*
Asparagaceae	*Lomandra purpurea*
Asparagaceae	*Lomandra spartea*
Asparagaceae	*Sowerbaea laxiflora*
Asparagaceae	*Thysanotus patersonii*
Asphodelaceae	*Caesia micrantha*
Asphodelaceae	*Chamaescilla versicolor*
Asphodelaceae	*Chamaescilla corymbosa*
Asteraceae	**Ursinia anthemoides*
Asteraceae	*Hyalosperma cotula*
Asteraceae	*Millotia myosotidifolia*
Asteraceae	*Pterochaeta paniculata*
Asteraceae	*Trichocline spathulata*
Asteraceae	*Waitzia* sp. (lack of identification material)
Colchicaceae	*Burchardia congesta*
Cyperaceae	*Lepidosperma apricola*
Cyperaceae	*Lepidosperma pubisquameum*
Cyperaceae	*Lepidosperma ?apricola*
Cyperaceae	*Lepidosperma squamatum*
Cyperaceae	*Mesomelaena tetragona*
Cyperaceae	*Morelotia octandra*
Dilleniaceae	*Hibbertia ?aurea*
Dilleniaceae	*Hibbertia hypericoides*
Dilleniaceae	*Hibbertia lasiopus*
Dilleniaceae	*Hibbertia* sp. (lack of identification material)
Droseraceae	*Drosera erythrorhiza*
Droseraceae	*Drosera macrantha*
Droseraceae	*Drosera pycnoblasta*
Droseraceae	*Drosera erythrorhiza*
Ericaceae	*Conostephium pendulum*
Ericaceae	*Leucopogon pulchellus*
Fabaceae	*Bossiaea eriocarpa*
Fabaceae	*Gastrolobium ? capitatum*
Fabaceae	*Gompholobium knightianum*
Fabaceae	*Gompholobium marginatum*
Fabaceae	*Labichea punctata*
Goodeniaceae	*Dampiera linearis*
Goodeniaceae	*Dampiera* sp.
Goodeniaceae	*Lechenaultia biloba*
Haemodoraceae	*Anigozanthos manglesii*
Haemodoraceae	*Conostylis setigera*
Haemodoraceae	*Conostylis setosa*

Haemodoraceae	*Haemodorum* sp.
Haloragaceae	*?Gonocarpus pithyoides*
Iridaceae	*Orthrosanthus laxus*
Iridaceae	*Patersonia occidentalis*
Iridaceae	*Patersonia pygmaea*
Lauraceae	*Cassytha racemosa*
Myrtaceae	*Acacia barbinervis*
Myrtaceae	*Babingtonia camphorosmae*
Myrtaceae	*Beaufortia macrostemon*
Myrtaceae	*Calothamnus sanguineus*
Myrtaceae	*Corymbia calophylla*
Myrtaceae	*Eucalyptus accedens*
Myrtaceae	*Eucalyptus marginata*
Myrtaceae	*Eucalyptus marginata* subsp. *thalassica*
Orchidiaceae	*Caladenia flava*
Orchidiaceae	*Calendenia ?flava*
Orchidiaceae	*Orchidaceae* sp.
Pittosporaceae	*Billardiera heterophylla*
Poaceae	*Amphipogon* sp. (lack of identification material)
Poaceae	*Austrostipa* sp. (lack of identification material)
Poaceae	*Neurachne alopecuroidea*
Proteaceae	*Banksia bipinnatifida*
Proteaceae	*Banksia nivea*
Proteaceae	*Banksia sessilis*
Proteaceae	*Banksia sphaerocarpa* var *sphaerocarpa*
Proteaceae	*Banksia bipinnatifida*
Proteaceae	*Grevillea pilulifera*
Proteaceae	*Grevillea synapheae*
Proteaceae	*Hakea lissocarpha*
Proteaceae	*Hakea stenocarpa*
Proteaceae	*Hakea undulata*
Proteaceae	*Isopogon asper*
Proteaceae	*Persoonia* sp (juvenile)
Proteaceae	*Petrophile serruriae*
Proteaceae	*Synaphea decorticans*
Restionaceae	*Loxocarya fasiculata*
Restionaceae	*Loxocarya flexuosa*
Rhamnaceae	*Trymalium ledifolium*
Rubiaceae	*Opercularia vaginata*
Rubiaceae	*Opercularia echinocephala*
Rutaceae	*Boronia ?cymosa*
Rutaceae	*Philotheca spicata*
Stylidiaceae	*Stylidium ciliatum*
Stylidiaceae	*Stylidium hispidum*
Stylidiaceae	*Stylidium amoenum*
Stylidiaceae	*Stylidium ciliatum*
Stylidiaceae	*Stylidium junceum*
Stylidiaceae	*Stylidium tenue* subsp. *majusculum*
Stylidiaceae	*Styphelia pallida*

Stylidiaceae	*Styphelia propinqua*
Thymelaeaceae	*Pimelea suaveolens*
Thymelaeaceae	*Pimelea ?suaveolens*
Xanthorrhoeaceae	*Xanthorrhoea acanthostachya*
Xanthorrhoeaceae	*Xanthorrhoea preissii*

APPENDIX B
QUADRAT DATA

Del Botanics

FIELD SHEET – FLORA AND VEGETATION SURVEY

Job Code: 2178 Chittering Rd, Chittering	**Date:** 05/09//2023	**Site:** Q1
GPS Datum: (50) 0415213 6509272	**Topography:** Flat	**Litter cover:** 30 % twigs, 40 % leaves 10% logs
Age since fire: >10 yrs	**Disturbance:** Hi Med **Lo**	**Soils:** Clay/Loam/Gravel (brown/orange)
Vegetation Description: Jarrah – Marri Woodland		
Vegetation Condition: Very Good		
Observations: No weeds, bush in very good condition		

Coll No.	Taxon	Ht (cm)	% Alive	% Dead	% Cover
Top	*Eucalyptus marginata* subsp. *thalassica*	2000	100		65
Top	*Corymbia calophylla*	1300	100		5
Middle	*Xanthorrhoea preissii*	200	100		4
Middle	*Banksia sessilis*	200	100		3
Middle	*Bossiaea eriocarpa*	100	100		3
Bottom	*Hibbertia hypericoides*	60	100		18
Bottom	*Patersonia occidentalis*	60	100		6
	Mesomelaena tetragona				

	Haemodorum sp				
	Banksia bipinnatifida				
	Lechenaultia biloba				
	Grevillea synapheae				
	Banksia nivea				
SP 7	*Hibbertia lasiopus*				
	Dampiera linearis				
	Stylidium sp				
	Gompholobium knightianum				
	Gompholobium marginatum				
	Morelotia octandra				
	Conostylis setigera				
	Lepidosperma pubisquameum				
SP1	*Grevillea pilulifera*				
SP 2	*Synaphea decorticans*				
SP 3	*Acacia barbinervis*				
	Labichea punctata				
	Hibbertia sp				
	Loxocarya flexuosa				
	Cassytha racemosa				
	Hakea lissocarpha				
	Calothamnus sanguineus				
Sp 4	*Leucopogon pulchellus*				
	Isopogon asper				
	Opercularia echinocephala				
	Conostylis setosa				
	Patersonia pygmaea				
	Drosera erythrorhiza				
	Austrostipa sp				
	Stylidium hispidum				
	Chamaescilla corymbosa				
	Chamaescilla versicolor				
	Lepidosperma ?apricola				
	Caesia micrantha				
	Leucopogon sp				
	Loxocarya fasiculata				
	Pimelea ?suaveolens				
SP 5	*Gastrolobium ? capitatum*				
	Amphipogon sp				
	Lepidosperma squamatum				
SP 6	*Drosera pycnoblasta*				

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FIELD SHEET – FLORA AND VEGETATION SURVEY

Job Code: 2178 Chittering Rd, Chittering	**Date:** 05/09//2023	**Site:** Q2
GPS Datum: (50) 0415292 6509303	**Topography:** Upper slope	**Litter cover:** 20 % twigs, 40 % leaves 20% logs
Age since fire: >10 yrs	**Disturbance:** Hi Med **Lo**	**Soils:** Clay/Loam/Gravel (brown/orange)
Vegetation Description: Jarrah – Marri Woodland		
Vegetation Condition: Very Good		
Observations: Bush in very good condition, historic logging		

Coll No.	Taxon	Ht (cm)	% Alive	% Dead	% Cover
Top	*Eucalyptus marginata* subsp. *thalassica*	1200	100		25
Top	*Corymbia calophylla*	1500	100		7
Middle	*Banksia sessilis*	250	100		20
Middle	*Xanthorrhoea preissii*	200	100		10
Bottom	*Hibbertia hypericoides*	50	100		12
Bottom	*Leucopogon pulchellus*	50	100		4
Bottom	*Banksia sphaerocarpa* var *sphaerocarpa*	50	100		3.5

	Grevillea synapheae				
	Haemodorum sp				
	Xanthorrhoea acanthostachya				
	**Ursinia anthemoides*				
	Styphelia propinqua				
	Banksia nivea				
	Labichea punctata				
	Bossiaea eriocarpa				
	Pimelea suaveolens				
	Lechenaultia biloba				
SP 9	*Lomandra spartea*				
	Burchardia congesta				
Sp 3	*Acacia barbinervis*				
	Drosera macrantha				
	Gompholobium knightianum				
	Patersonia occidentalis				
SP 2	*Synaphea decorticans*				
	Boronia ?cymosa				
	Loxocarya fasiculata				
	Calendenia ?flava				
	Daucus glochidiatus				
	Philotheca spicata				
SP 4	*Leucopogon pulchellus*				
	Lepidosperma pubisquameum				
	Xanthosia huegelii				
	Conostylis setigera				
	Cassytha racemosa				
	Lomandra ? purpurea				
	Morelotia octandra				
	Conostylis setosa				
	Stylidium hispidum				
	Mesomelaena tetragona				
	Calothamnus sanguineus				
SP 6	*Drosera pycnoblasta*				
	Neurachne alopecuroidea				
	Chamaescilla versicolor				
	Waitzia sp				
	Bamksia sessilis				
SP 10	*Beaufortia macrostemon*				
SP 11	*Millotia myosotidifolia*				
	Babingtonia camphorosmae				
	Gompholobium marginatum				
	Sowerbaea laxiflora				
SP 5	*Gastrolobium ? capitatum*				
SP 12	*?Gonocarpus pithyoides*				
	Patersonia pygmaea				
	Thysanotus patersonii				
	Billardiera heterophylla				

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FIELD SHEET – FLORA AND VEGETATION SURVEY

Job Code: 2178 Chittering Rd, Chittering	**Date:** 05/09//2023	**Site:** Q3
GPS Datum: (50) 0415346 6509179	**Topography:** Flat	**Litter cover:** 20 % twigs, 50 % leaves 10% logs
Age since fire: >10 yrs	**Disturbance:** Hi Med **Lo**	**Soils:** Clay/Loam/Gravel (brown/orange)
Vegetation Description: Jarrah – Marri Woodland		
Vegetation Condition: Very Good		
Observations: Bush in very good condition		

Coll No.	Taxon	Ht (cm)	% Alive	% Dead	% Cover
Top	*Eucalyptus marginata* subsp. *thalassica*	2000	100		7
Top	*Corymbia calophylla*	2000	100		15
Middle	*Xanthorrhoea acanthostachya*	130	100		12
Middle	*Banksia sessilis*	140	90	10	3
Middle	*Styphelia propinqua*	120	100		4
Bottom	*Hibbertia hypericoides*	50	100		13
Bottom	*Calothamnus sanguineus*	30	100		5
Bottom	*Patersonia occidentalis*	50	100		4

	Burchardia congesta				
	Xanthorrhoea preissii				
	Sowerbaea laxiflora				
	Grevillea synapheae				
	Hibbertia acerosa				
SP 5	*Gastrolobium ? capitatum*				
SP 2	*Synaphea decorticans*				
	Bossiaea eriocarpa				
SP 6	*Drosera pycnoblasta*				
SP 12	*?Gonocarpus pithyoides*				
	Haemodorum sp				
	Anigozanthos manglesii				
	Gompholobium knightianum				
	Hakea lissocarpha				
	Labichea punctata				
	Stylidium junceum				
	Cassytha racemosa				
	Chamaescilla versicolor				
	Styphelia propinqua				
	Stylidium ciliatum				
	Amphipogon sp				
	Conostylis setigera				
	Lepidosperma apricola				
	Petrophile serruriae				
	Drosera erythrorhiza				
	Orchidaceae sp				
SP 7	*Hibbertia lasiopus*				
	Caesia micrantha				
	Neurachne alopecuroidea				
	Banksia sessilis				
	Stylidium hispidum				
	Conostephium pendulum				
	Ptilotus manglesii				
SP 1	*Grevillea pilulifera*				
	Mesomelaena tetragona				
	Hakea stenocarpa				
	Pimelea suaveolens				
	Burchardia congesta				
	**Ursinia anthemoides*				
	Banksia bipinnatifida				
	Morelotia octandra				
	Conostylis setigera				
	Lomandra purpurea				
	Loxocarya fasiculata				
SP 9	*Lomandra spartea*				
	Bossiaea eriocarpa				
	Caladenia flava				
SP 11	*Hyalosperma cotula*				
	Daucus glochidiatus				
	Opercularia vaginata				
	Conostylis setosa				
SP 5	*Styphelia pallida*				

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FIELD SHEET – FLORA AND VEGETATION SURVEY

Job Code: 2178 Chittering Rd, Chittering	**Date:** 05/09//2023	**Site:** Q4
GPS Datum: (50) 0415591 6509149	**Topography:** Upper slope	**Litter cover:** 30 % twigs, 60 % leaves 10% logs
Age since fire: >10 yrs	**Disturbance:** Hi Med **Lo**	**Soils:** Clay/Loam/Gravel (brown/orange)
Vegetation Description: Jarrah – Marri Woodland		
Vegetation Condition: Very Good		
Observations: Bush in very good condition, historic logging. Transition to Powderbark		

Coll No.	Taxon	Ht (cm)	% Alive	% Dead	% Cover
Top	*Eucalyptus marginata*	1500	100		30
Top	*Corymbia calophylla*	1500	100		2
Top	*Eucalyptus accedens*	1500	100		5
Middle	*Banksia sessilis*	300	100		2
Middle	*Hakea undulata*	400	100		4
Middle	*Xanthorrhoea acanthostachya*	300	100		7
Bottom	*Hibbertia hypericoides*	60	100		22
Bottom	*Banksia nivea*	30	100		4

Bottom	*Patersonia occidentalis*	60	100		3
	Cassytha racemosa				
	Bossiaea eriocarpa				
	Leucopogon sp				
	Haemodorum sp				
	Grevillea synapheae				
SP 2	*Synaphea decorticans*				
	Gompholobium marginatum				
	Hakea lissocarpha				
	Drosera erythrorhiza				
	Gompholobium knightianum				
	Conostylis setigera				
	Chamaescilla corymbosa				
	Lepidosperma pubisquameum				
	Orthrosanthus laxus				
	Petrophile serruriae				
	Hibbertia acerosa				
	Daucus glochidiatus				
SP 7	*Hibbertia lasiopus*				
	Lomandra sp				
	Stylidium tenue subsp. *majusculum*				
Sp 6	*Drosera pycnoblasta*				
	Xanthosia huegelii				
	Caesia micrantha				
	Philotheca spicata				
	Conostephium pendulum				
	Ptilotus manglesii				
Sp 12	*Acacia barbinervis*				
	Conostylis setosa				
	Stylidium hispidum				
	Caladenia flava				
	Dampiera sp				
	Orchidaceae sp				
	Hakea lissocarpha				
SP 9	*Lomandra spartea*				
	Persoonia sp (juvenile)				
	Ptilotus manglesii				
	Loxocarya fasiculata				
	Trichocline spathulata				
	Dampiera linearis				
Sp 12	*Acacia barbinervis*				
	Styphelia pallida				
	Labichea punctata				
	Pterochaeta paniculata				
	Lechenaultia biloba				
	Stylidium amoenum				
	Morelotia octandra				
	Lomandra sp				
	Conostylis setigera				
	Lepidosperma squamatum				
	Stylidium ciliatum				
	Leucopogon sp				
	Trymalium ledifolium				
SP 2	*Synaphea decorticans*				
SP 11	*Hyalosperma cotula*				

APPENDIX C
POTENTIAL BLACK COCKATOO HABITAT TREE DATA

Tree Number	Photo	Tree Species	UTM	DBH	Height	Health	Hollows	Comments
1		*Corymbia calophylla*	50 J 415160.17 6509347.605	738.85	25	Good	na	multi stem
2		*Eucalyptus marginata*	50 J 415192.44 6509320.155	764.33	30	Good	na	na
3		*Eucalyptus marginata*	50 J 415202.50 6509346.589	573.25	25	Good	1 small 1 medium	na
4		*Eucalyptus marginata*	50 J 415201.98 6509348.105	668.79	30	Very Good	1 medium 1 small	na
5		*Eucalyptus marginata*	50 J 415206.02 6509368.027	535.03	20	Very Good	5 medium 1 small	na

6		*Eucalyptus marginata*	50 J 415231.53 6509327.125	958.60	25	Very Good	2 large 3 medium	na
7		*Eucalyptus marginata*	50 J 415254.02 6509320.943	824.84	25	Degraded	1 medium	na
8		*Eucalyptus marginata*	50 J 415282.96 6509334.861	668.79	20	Very Good	1 small 2 medium 1 large	na
9		*Eucalyptus marginata*	50 J 415309.27 6509324.307	808.92	20	Good	1 small 1 medium	na
10		*Eucalyptus marginata*	50 J 415328.24 6509289.622	636.94	25	Very Good	2 medium 2 small	na

11		*Eucalyptus marginata*	50 J 415309.24 6509300.933	573.25	25	Very Good	na	na
12		*Corymbia calophylla*	50 J 415305.53 6509283.356	837.58	30	Very Good	4 medium	na
13		*Eucalyptus marginata*	50 J 415326.79 6509268.137	611.46	30	Good	1 large 1 medium	na
14		*Corymbia calophylla*	50 J 415346.77 6509230.326	636.94	30	Very Good	na	na
15		*Eucalyptus marginata*	50 J 415349.58 6509225.028	541.40	20	Good	1 medium	na

16		*Eucalyptus marginata*	50 J 415323.60 6509182.946	1187.90	25	Good	1 large	centre of trunk burnt out
17		*Eucalyptus marginata*	50 J 415392.25 6509206.626	732.48	25	Very Good	1 large 1 medium	na
18		*Eucalyptus marginata*	50 J 415395.12 6509206.459	742.04	30	Very Good	2 large 1 medium	na
19		*Eucalyptus marginata*	50 J 415395.01 6509168.104	1038.22	30	Good	3 large	na
20		*Eucalyptus marginata*	50 J 415344.42 6509155.657	643.31	20	Very Good	1 large 1 small	na

21		*Corymbia calophylla*	50 J 415311.53 6509161.280	662.42	30	Good	1 medium 1 small	na
22		*Corymbia calophylla*	50 J 415300.30 6509151.845	757.96	30	Very Good	1 medium 1 small	na
23		*Eucalyptus marginata*	50 J 415286.99 6509160.795	550.96	30	Good	na	na
24		*Eucalyptus marginata*	50 J 415264.86 6509197.512	700.64	30	Good	2 small 1 medium	na
25		*Corymbia calophylla*	50 J 415264.24 6509194.973	691.08	25	Good	1 large 1 small	signs of use

26		*Eucalyptus marginata*	50 J 415264.91 6509210.941	856.69	25	Good	3 large	na
27		*Corymbia calophylla*	50 J 415272.53 6509243.815	636.94	15	Good	na	missing top, possible possum use
28		*Eucalyptus marginata*	50 J 415235.92 6509244.751	636.94	30	Very Good	2 small	na
29		*Corymbia calophylla*	50 J 415203.38 6509266.656	987.26	30	Very Good	1 large	na

30		*Eucalyptus marginata*	50 J 415191.63 6509286.323	636.94	25	Very Good	1 medium	na
31		*Eucalyptus marginata*	50 J 415194.51 6509300.504	636.94	20	Good	1 large	na
32		*Eucalyptus wandoo*	50 J 415631.09 6509122.896	1178.34	35	Very Good	4 large 3 medium	na
33		*Eucalyptus accedens*	50 J 415613.93 6509201.270	356.69	25	Very Good	1 medium	na

34		*Eucalyptus accedens*	50 J 415623.96 6509200.877	324.84	25	Very Good	na	na
35		*Eucalyptus accedens*	50 J 415591.09 6509200.610	318.47	25	Very Good	na	na
36		*Eucalyptus marginata*	50 J 415576.08 6509214.265	802.55	25	Dead	1 large 2 medium	na
37		*Eucalyptus wandoo*	50 J 415568.20 6509216.386	477.71	25	Very Good	1 small	na

38		*Eucalyptus marginata*	50 J 415545.02 6509194.155	605.10	25	Good	na	na
39		*Eucalyptus marginata*	50 J 415513.36 6509181.957	1133.76	25	Very Good	2 large 2 medium	na
40		*Eucalyptus marginata*	50 J 415511.91 6509179.792	796.18	20	Good	2 large	na
41		*Eucalyptus marginata*	50 J 415509.68 6509164.951	745.22	30	Good	2 large	na
42		*Eucalyptus marginata*	50 J 415508.84 6509158.832	668.79	25	Good	1 large	na

43		*Eucalyptus marginata*	50 J 415511.48 6509150.650	914.01	30	Very Good	1 large 1 medium	na
44		*Corymbia calophylla*	50 J 415505.43 6509166.342	649.68	25	Good	1 large 1 medium	na
45		*Corymbia calophylla*	50 J 415481.36 6509180.113	560.51	30	Good	1 small	na
46		*Eucalyptus marginata*	50 J 415522.83 6509121.510	595.54	30	Good	2 medium 1 small	na

47		*Corymbia calophylla*	50 J 415531.25 6509126.298	579.62	30	Good	1 large	na
48		*Corymbia calophylla*	50 J 415538.79 6509145.932	557.32	35	Very Good	1 small	bees in hollow
49		*Eucalyptus marginata*	50 J 415556.25 6509143.825	605.10	25	Very Good	2 large	na
50		*Eucalyptus marginata*	50 J 415556.37 6509129.004	636.94	35	Very Good	1 large 1 small	large hollows signs of bird use

51		*Corymbia calophylla*	50 J 415573.16 6509139.338	592.36	35	Very Good	1 medium	na
52		*Eucalyptus marginata*	50 J 415573.74 6509137.633	566.88	30	Dead	1 large	na
53		*Corymbia calophylla*	50 J 415577.06 6509140.954	745.22	35	Degraded	2 large 1 medium	na
54		*Eucalyptus marginata*	50 J 415576.22 6509162.230	563.69	35	Dead	na	na

55		*Eucalyptus accedens*	50 J 415589.99 6509179.001	302.55	30	Very Good	na	na
56		*Eucalyptus marginata*	50 J 415581.86 6509184.002	585.99	25	Good	1 medium 1 small	na
57		*Eucalyptus accedens*	50 J 415610.19 6509136.599	461.78	25	Very Good	na	na
58		*Eucalyptus accedens*	50 J 415609.87 6509121.806	391.72	25	Very Good	na	na

NB: Each tree's health is determined by the condition of the leaves, bark and observations of any diseases or notable disturbances of the tree.

Hollows	**Information**
Large Hollow	< 25cm entrance
Medium Hollow	10-20cm entrance
Small Hollow	5-10cm entrance
Tree Health	**Information**
Very Good	Tree overall health is excellent
Good	Tree presents minor signs of stress
Degraded/Stressed	Tree has some markers of its health deteriorating
Dead	Tree has no alive branches
Hollow Suitability	**Information**
Suitable	Tree DBH >500mm with Large hollow/s
Potential	Tree DBH >500mm with Small/Medium hollow/s
Known	Visible use of hollows

Appendix E Site and Soil Evaluation

LOCAL GEOTECHNICS

31 January 2024

Report on

Site Soil Evaluation

2178 Chittering Road, Lower Chittering WA

Project:
LG2852023SSE REV_1

Client:
Conrad Moller

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LOCAL GEOTECHNICS

31 January 2024

To
Conrad Moller

RE: Site Soil Evaluation for 2178 Chittering Road, Lower Chittering WA.

This letter presents our report on Site Soil Evaluation carried out at *2178 Chittering Road, Lower Chittering WA*. The report must be thoroughly read and implemented in full, no partial implementation of this report is allowed.

If you have any questions in regards to the Site Soil Evaluation or we can be of further assistance, please do not hesitate to contact Local Geotechnics.

Sincerely yours

Dr. Harun Meer
Ph.D.(Geotech), M. Eng. (Geotech), B. Eng. (Civil)
MIEAust, CPEng, EngExec, NER, APEC Engineer, IntPE(Aust)
Director
Local Geotechnics

PROJECT INFORMATION

Project	**LG2852023SSE REV_1** **Site Soil Evaluation**
Site Location	**2178 Chittering Road, Lower Chittering WA**

Rev	Description	Date	Prepared by	Approved by
0	Issued to client	27 September 2023	R Hai	H Meer
1	Issued to client	31 January 2024	-	H Meer

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EXECUTIVE SUMMARY

Conrad Moller commissioned Local Geotechnics to prepare Site Soil Evaluation (SSE) report for 2178 Chittering Road, Lower Chittering WA. The objectives of the investigation were to ***site soil evaluation as per AS 1547.***

The proposed construction a septic system or effluent system for residential development.

The field investigation was conducted on 04 September 2023. The weather condition was cloudy and wet during field investigation.

The findings of the site classifications are presented in the following sections

Site Soil Evaluation as per AS1547

Site soil evaluation was conducted as per AS 1547. *Permeably data can be further assessed for ATU or leach drain by using Table L1 in Australian Standard AS1547. A copy of Table L1 is attached in Appendix B.* The soil category was determined using soil logs, PSD, and permeability results to the soil classification table of the AS/NZS 1547:2012. Summary of site soil evaluations is shown below, and the details are presented in Section 4.1.

Soils Property	Result
Colour	Pale brown to orange brown
Texture	Gravel and sand
Structure	Structureless
Coarse Fragments	50-90%, fine to coarse grained gravel, cobbles and boulders
Permeability	2.6 m/day
Soil Category	2
Resultant Design Loading Rate (DLR) For conventional trenches (mm/day)	Primary Treated effluent 15 (Ref. Note 4, presented below from AS1547, *Table L1)*; Secondary Treated effluent 50 (Ref. Note 1, presented below from AS1547, Table L1); Evapotranspiration Absorption (ETA)/ Evapotranspiration Seepage (ETS) systems are not normally used on soil Categories 1 to 3 (Ref. Note 4, presented below from AS1547, Table L1)

NOTES:

1 The treatment capacity of the soil and not the hydraulic capacity of the soil or the growth of the clogging layer govern the effluent loading rate in Category 1 and weakly structured Category 2 soils. Land application systems in these soils require design by a suitably qualified and experienced person, and distribution techniques to help achieve even distribution of effluent over the full design surface (see L6.2 and Figure L4 for recommended discharge method by discharge control trench). These soils have low nutrient retention capacities, often allowing accession of nutrients to groundwater.

2 To enable use of such soils for on-site wastewater land application systems, special design requirements and distribution techniques or soil modification procedures will be necessary. For any system designed for these soils, the effluent absorption rate shall be based upon soil permeability testing. Specialist soils advice and special design techniques will be required for clay dominated soils having dispersive (sodic) or shrink/swell behaviour. Such soils shall be treated as Category 6 soils. In most situations, the design will need to rely on more processes than just absorption by the soil.

3 If K_{sat} < 0.06 m/d, a full water balance for the land application can be used to calculate trench/bed size (see Appendix Q).

4 ETA/ETS systems are not normally used on soil Categories 1 to 3.

5 For Category 6 soils ETA/ETS systems are suitable only for use with secondary treated effluent.

The effluent system must be designed in accordance with Australian Standard AS1547 and as per the requirements of the local council or shire.

It is recommended that sustainable onsite sewage management systems can be installed to meet the needs of the proposed development.

A compost toilet unit can be option. **LAA for each unit is 113.1 m^2.** *The required LAA for primary effluent system is available at the site. Location of LAA remains at the discretion of the future landowner as long as the total area matches with the calculated LAA.*

LG also recommends a Flatbed Leach Drain can be an option too. This is because the Flatbed Leach Drain complies with Australian Standard 1547:2012 and has several advantages as follow:

- They can be used in low profile system;
- They are suitable for shallow excavation; and
- They are also suitable for rocky or high-water table areas.

It is also recommended that following effluent systems will also be suitable for the proposed sublot:
• Inverted Leach Drain;
• Secondary Treatment unit, an Aerobic Treatment Unit (ATU);

LG recommends conducting a water table determination during the construction phase or during winter (rainy season). If shallow water table is determined during winter season at the stie or before construction, LG recommends adopting of one of the following options:

- Raise the effluent area to accommodate effluent/ATU system, at least 1.5 m clearance from the water table; or,
- Dewatering can be an option to keep the surrounding area of effluent/ATU system in dry condition; or,
- Change the dimension (shallower depth) of the effluent/ATU system.

In considering the Expected Available Area (EAA) for the proposed lot, setback distance from environmental and structural landmarks should be assessed in accordance with the Government Sewerage Policy (GSP) 2019. Which states that any on-site sewerage system is not to be located within:

- A wellhead protection zone or on Crown land within a reservoir protection zone;
- 100 metres of the high-water mark of a reservoir or 100 metres of any bore used for public drinking water supply;
- 30 metres of a private bore used for household/drinking water purposes;
- 100 metres of a waterway or significant wetland and not within a waterway foreshore area or wetland buffer. The separation distance should be measured outwards from the outer edge of riparian or wetland vegetation.
- 100 metres of a drainage system that discharges directly into a waterway or significant wetland without treatment: or
- Any area subject to inundation and/or flooding in a 10 per cent Annual Exceedance Probability (AEP) rainfall event.

1.0 INTRODUCTION

Conrad Moller commissioned Local Geotechnics (LG) to prepare a Site Soil Evaluation report for 2178 Chittering Road, Lower Chittering WA (the project). The site location is shown in Figure 1. The area of the site is 35,298 m^2. The proposed construction a septic system or effluent system for residential development, the site plan is attached in Appendix A.

Figure 1. Aerial View of the Site Location (Source: Landgate Map)

The objectives of the investigation were to undertake ***Site Soil Evaluation (SSE) as per Australian Standard AS 1547.*** The field investigation was conducted on 04 September 2023. The weather condition was cloudy and wet during field investigation.

The field investigation consisted of field observation, documentation, sub-surface probing and soil profile logging, permeability testing and taking photograph.

The scope of the investigation did not include compaction control, bearing capacity, wind force calculations or classifications, slope stability checking, and settlement calculation. Environmental issues were not considered in this report.

2.0 PROPOSED DEVELOPMENT

The proposed construction a septic system or effluent system for residential development

3.0 SCOPE AND OBJECTIVES

The scope and objectives of the investigation are as follows:

- Conducting of up to seven (07) test pits by using a 1.5t excavator up to 2.0 m or refusal;
- Logging of site soil profile as per Australian Standard AS1726;
- Groundwater recording as per test pit observation;
- Submit a factual report on findings to classify the site in accordance with the Australian Standard AS2870 - 2011;
- Conducting of laboratory tests at NATA accredited laboratory which included:
  - Particle Size Distribution Test (AS 1289 3.6.1); and
  - Emerson Class (AS1289.3.8.1-2006)

The objective of this inspection is to determine whether the proposed lot is capable of on-site effluent disposal. The scope of the work includes:

- Desktop study and site visit to identify the Expected Available Area (EAA) within the lot;
- Submit a factual report on findings to classify the site in accordance with the Australian Standard AS 1547.
- Providing recommendation on type of effluent system.
- Determining whether this EAA is large enough to accommodate any Land Application Area (LAA);
- An assessment of the GSP 2019 criteria to determine whether any LAA can be established on site; If LAA can be established, provide suggestions on the best treatment and discharge system to dispose effluent into this LAA.

Soil category and soil factors such as slope, groundwater table, and setback distances have been investigated and taken into consideration when assessing the capability of onsite effluent disposal in proposed lot.

4.0 SITE CONDITIONS

4.1 Surface Condition

The proposed site is located within a bush area. There are small to large size trees at the stie. The topsoil is mainly gravelly and sandy soils, covered with loose gravel, grass, branches, and leaves. There are rock outcrops and scattered boulders present across the site. The land slopes gently from northeast to southwest. The ground surface level is undulating, the overall topography in the surrounding area is hilly. There is an existing single-storey building at the site.

No water ponding was observed at the site. Site photos taken during the field investigation are shown in Appendix C. Site assessment desktop study is presented in Table 1.

Table 1. Site Assessment

Site Factor	Result
Date of assessment	04 September 2023
Area	35,298 m^2
Slope	Approximately 1:20 to 1:10 small hill
Drainage Pattern	Dendritic
Exposure	Sun, wind and rain
Erosion and Land Slip	None
Boulders and Rock Outcrops	Present across site
Vegetation	Small to large size trees, shrubs, grass and flowers
Water Course	None
Water Bore	None
Water Table	None within the investigated depth
Weathered Rock	Loose gravel, rock boulders
Cut and Fill	None
Climate	Hot dry summers, mild wet winters
Flooding	None
Channelled Runoff	None along the site
Soil Surface Condition	Gravelly or sandy soils
Other Site Specific Factors	None
Flood Potential	Not applicable
Site Drainage	None

4.2 Subsurface
Sub-surface condition of the site is laterite over Mesozoic sediments and Precambrian crystalline rocks. (Source: Department of Water and Environmental Regulation).

4.3 Water Table
A review of 'Perth Ground Water Atlas' of the Department of Water was carried out for this site. No ground water information was found for this site.

4.4 Land use and Zoning
The site does not fall under any of the protection zones according to the Department of Water and Environmental Regulation.

4.5 Public Drinking Water Source Area (PDWSA)
The site is not located within a PDWSA according to the Department of Water and Environmental Regulation database. The site PDWSA is shown in Figure 2.

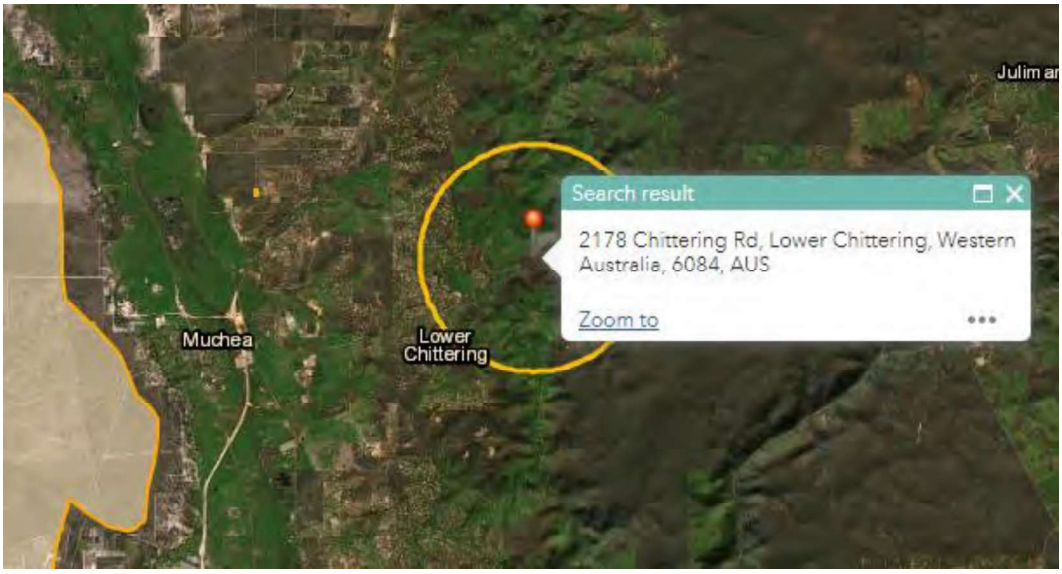


Figure 2. PDWSA Information (Source: Department of Water and Environmental Regulation)

4.6 Sewerage Sensitive Area
The site is located within the Brockman River Catchment. The Brockman River Catchment is shaded in yellow in Figure 3.

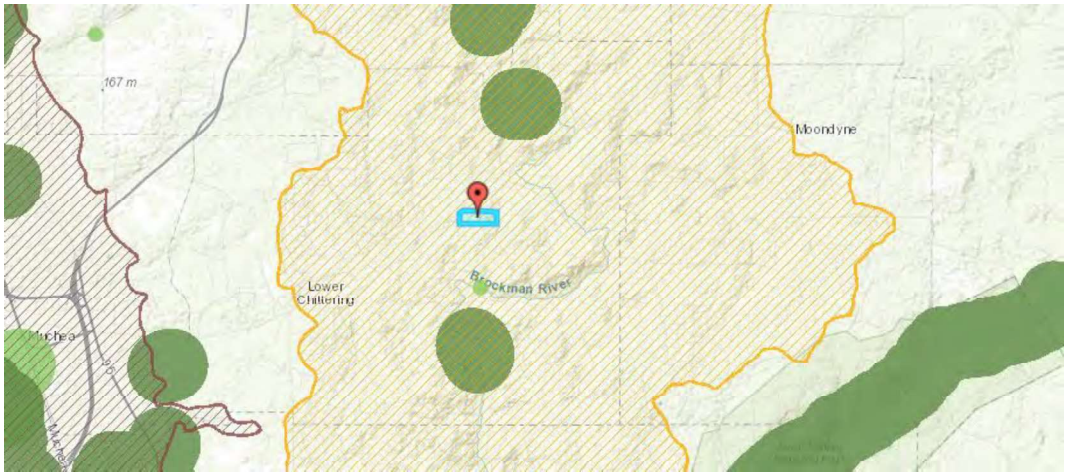


Figure 3. Sewerage Sensitive Area (Source: Department of Planning, Lands and Heritage)

4.7 Flood Plain Mapping

The site is not located within a floodplain according to the Western Australia Flood Plain Mapping database. Potential floodplains are shown in figure 4.

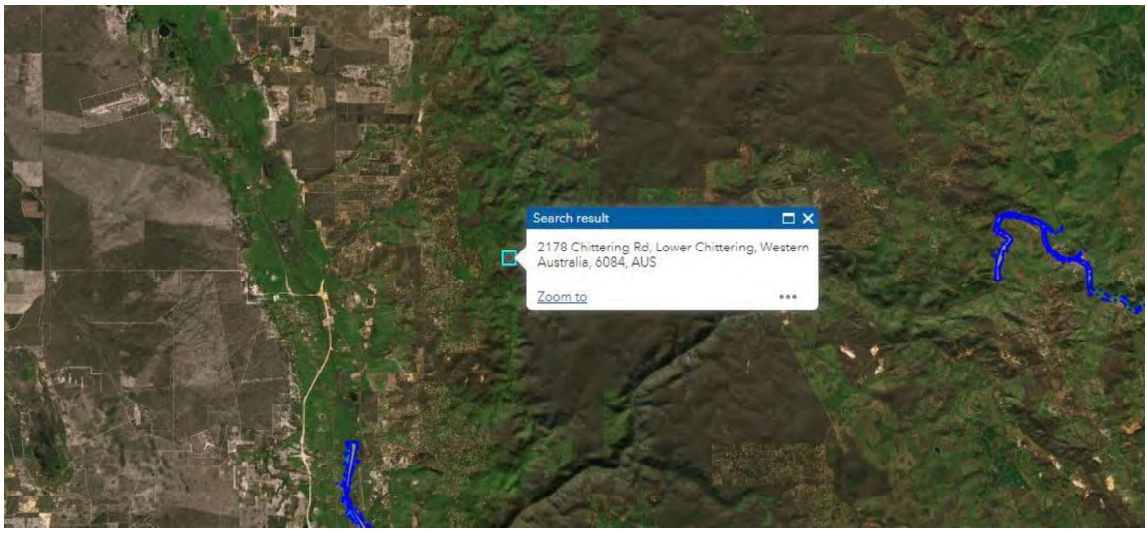


Figure 4. Flood Plan Mapping (Source: Department of Water and Environmental Regulation)

4.8 Acid Sulfate Soils (ASS)

No known ASS soils in the vicinity of the site. The site ASS is shown in Figure 5.

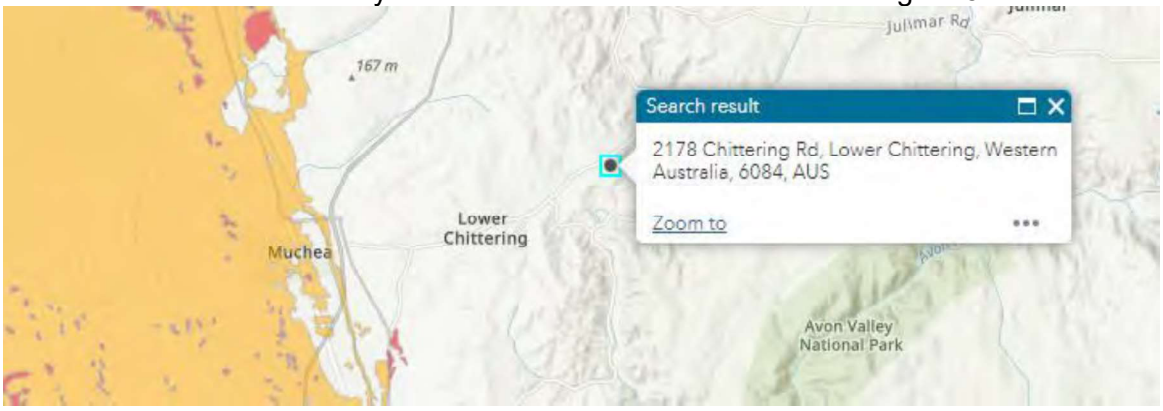


Figure 5. Site ASS Information (Source: https://maps.water.wa.gov.au/Groundwater)

5.0 FIELD INVESTIGATION

The field investigation consists of sub-surface probing by using a 1.5 excavator at seven locations and taking photograph.

5.1 Test Pit Logs

Seven test pits (TP1 to TP7) were conducted at the site by using a 1.5t excavator. Test pit locations are shown in the site sketch in Appendix A.

During sub-surface probing, the spoil was stockpiled adjacent to the test location. The subsurface profiles exposed in the test pits were logged in accordance with AS1726 and were photographed to provide a visual record of subsurface conditions encountered. Following these activities, each test location was progressively backfilled in the reverse order of excavation works.

Six test pits (TP1, TP2, TP3, TP4, TP6 and TP7) consist of a similar soil profile as described below:

- **0.0 – 0.1 m: TOPSOIL, Sandy GRAVEL (GP) -** fine to coarse grained, up to 60 mm in size, subrounded, brown, sand of fine to medium grained, greyish brown, trace of silt and grass roots, moist, loose to medium dense; followed by
- **0.1 – 1.2 m: MIXTURE OF ROCK BOULDERS AND SOIL, Sandy GRAVEL (GP) –** fine to coarse grained, up to 60 mm in size, subrounded, brown, sand of fine to medium grained, pale brown, with rock boulders and tree roots, moist, medium dense to very dense; up to the maximum of the investigated depth.

Test pit (TP5) consists of a soil profile as described below:

- **0.0 – 0.1 m: TOPSOIL, Gravelly SAND (SP) -** fine to medium grained, grey, gravel of fine to coarse grained, up to 25 mm in size, subangular, black, trace of silt and grass roots, moist, loose; followed by
- **0.1 – 0.4 m: Gravelly SAND (SP) -** fine to medium grained, pale grey, gravel of fine to coarse grained, up to 25 mm in size, subangular, black, trace of cobbles and tree roots, moist, loose; up to the maximum of the investigated depth.

TP1, TP2, TP3, TP4, TP5, TP6 and TP7 were terminated at a depth of 1.2 m, 0.1 m, 0.4 m, 0.4 m, 0.4 m, 0.5 m, and 0.5 m respectively due to bucket refusal on rock. Ground water table was not encountered at any of the test pits during the investigation. Test pit logs are attached in Appendix B.

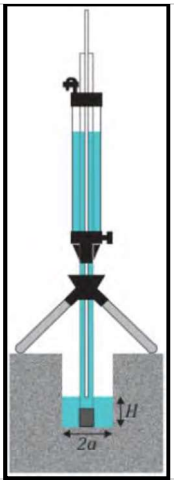
5.2 Field Permeability Test

Two Field Permeability Test (FPT1 and FPT2) were conducted as per ASTM D5126 – 90 by using a Guelph Permeameter.

5.2.1 Testing Equipment: Guelph Permeameter

Guelph Permeameter is a constant head device that operates on the Mariotte siphon principle. The method involves measuring the steady-state rate of water recharge into unsaturated soil from a cylindrical well hole, in which a constant head of water is maintained. The Guelph Permeameter is capable of measuring hydraulic conductivity in sands and clays. It consists of a tripod to hold the apparatus vertical, the reservoir tube and the inner air tube. A typical test set-up is shown in Figure 6.

(a) Field Set-up



(b) Field Testing

Figure 6. Field Permeability Test by Guelph Permeameter

5.2.2 Testing Procedure

The field permeability test was conducted as per ASTM D5126 – 90. The following steps were followed during testing by using the Guelph Permeameter:

- The testing well (radius = a) was prepared using an auger. Rough auger followed by sizing auger were used to make the hole for permeability test as shown in Figure 6 (b).
- The depth of auger was selected based on head depth to be used in the test.
- Soil around the testing well was saturated by pouring extra water into the test hole. Water pouring was performed a few times to ensure the surrounding area of the hole becomes fully saturated.
- The Guelph Permeameter was then assembled as shown in Figure 6 (a) and both inner and outer reservoirs were filled with water.
- A head (H) was used in the testing by slowly lifting the air tube.
- The outflow from the reservoirs was recorded for a certain time interval. The timing of the reading was determined based on soil type.
- Reading was taken until at least three steady readings were observed during testing.

5.2.3 Test Results

It is assumed that site soil was fully saturated during the field permeability test.

Permeability test result is summarised in Table 2 and the test certificate is presented in Appendix B.

Table 2. Summary of Field Permeability Test Data

Test ID	Permeability		Test Depth (m)	Observed Soil type
	m/sec	m/day		
FPT1	$3.0*10^{-5}$	2.6	0.3	Sandy GRAVEL
FPT2	$3.1*10^{-5}$	2.7	0.3	

Soil permeability is a function of water potential and water content of the soil. The decrease in conductivity as the soil dries is due primarily to the movement of air into the soil to replace the water. As the air moves in, the pathways for water flow between soil particles becomes smaller and more tortuous, and flow becomes more difficult, which causes low permeability rate of the soil. Therefore, it is recommended that designers should use a reduction factor in using field permeability test data.
Permeability tests were conducted on sandy gravelly layer, therefore, data do not represent the permeability of the topsoil.

6.0 LABORATORY TEST

Laboratory tests were conducted at Local Geotechnics, a NATA accredited testing laboratory in WA. The following laboratory tests were undertaken:

- Particle Size Distribution Test (AS 1289 3.6.1); and
- Emerson Class (AS1289.3.8.1-2006)

The laboratory test results are summarised in Table 3. Laboratory test data show that the site soil is slightly reactive. The laboratory test certificates are attached in Appendix D.

Table 3. Summary of Laboratory Test Data

Sample	Particle Size Distribution (PSD)			Emerson Class
Location	Gravel (%)	Sand (%)	Fines < 75µm (%)	Class no.
TP3 (0.3-0.4 m)	63	31	6	2

7.0 ENGINEERING CONSIDERATIONS AND RECOMMENDATIONS

7.1 Site Soil Evaluation as per AS1547

Site soil evaluation was conducted as per AS 1547. *Permeably data can be further assessed for ATU or leach drain by using Table L1 in Australian Standard AS1547. A copy of Table L1 is attached in Appendix B.* The soil category was determined using soil logs, PSD, and permeability results to the soil classification table of the AS/NZS 1547:2012. Summary of site soil evaluations is shown Table 4, and the details are presented in Section 4.1.

Table 4. Summary of Site Soil Evaluations

Soils Property	Result
Colour	Pale brown to orange brown
Texture	Gravel and sand
Structure	Structureless
Coarse Fragments	50-90%, fine to coarse grained gravel, cobbles and boulders
Permeability	2.6 m/day
Soil Category	2
Resultant Design Loading Rate (DLR) For conventional trenches (mm/day)	Primary Treated effluent 15 (Ref. Note 4, presented below from AS1547, *Table L1*); Secondary Treated effluent 50 (Ref. Note 1, presented below from AS1547, Table L1); Evapotranspiration Absorption (ETA)/ Evapotranspiration Seepage (ETS) systems are not normally used on soil Categories 1 to 3 (Ref. Note 4, presented below from AS1547, Table L1)

NOTES:

1 The treatment capacity of the soil and not the hydraulic capacity of the soil or the growth of the clogging layer govern the effluent loading rate in Category 1 and weakly structured Category 2 soils. Land application systems in these soils require design by a suitably qualified and experienced person, and distribution techniques to help achieve even distribution of effluent over the full design surface (see L6.2 and Figure L4 for recommended discharge method by discharge control trench). These soils have low nutrient retention capacities, often allowing accession of nutrients to groundwater.

2 To enable use of such soils for on-site wastewater land application systems, special design requirements and distribution techniques or soil modification procedures will be necessary. For any system designed for these soils, the effluent absorption rate shall be based upon soil permeability testing. Specialist soils advice and special design techniques will be required for clay dominated soils having dispersive (sodic) or shrink/swell behaviour. Such soils shall be treated as Category 6 soils. In most situations, the design will need to rely on more processes than just absorption by the soil.

3 If K_{sat} < 0.06 m/d, a full water balance for the land application can be used to calculate trench/bed size (see Appendix Q).

4 ETA/ETS systems are not normally used on soil Categories 1 to 3.

5 For Category 6 soils ETA/ETS systems are suitable only for use with secondary treated effluent.

The effluent system must be designed as per Australian Standard AS1547 and as per the requirements of the local council or shire.

7.2 Recommendation

The effluent system must be designed in accordance with Australian Standard AS1547 and as per the requirements of the local council or shire.

It is recommended that sustainable onsite sewage management systems can be installed to meet the needs of the proposed development**.**

A compost toilet unit can be option. A Flatbed Leach Drain can be an option too. This is because the Flatbed Leach Drain complies with Australian Standard 1547:2012 and has several advantages as follow:

- They can be used in low profile system;
- They are suitable for shallow excavation; and
- They are also suitable for rocky or high water table areas.

It is also recommended that following effluent systems will also be suitable for the proposed sublot:
• Inverted Leach Drain;

• Secondary Treatment unit, an Aerobic Treatment Unit (ATU);
LG recommends conducting a water table determination during the construction phase or during winter (rainy season). If shallow water table is determined during winter season at the stie or before construction, LG recommends adopting of one of the following options:

- Raise the effluent area to accommodate effluent/ATU system, at least 1.5 m clearance from the water table; or,
- Dewatering can be an option to keep the surrounding area of effluent/ATU system in dry condition; or,
- Change the dimension (shallower depth) of the effluent/ATU system.

7.3 Proposed Land Application Area (LAA), Primary Efluent

As per the GSP 2019 formula, the LAA for the proposed lot was calculated as follows:

(1) Estimated hydraulic load (L/day)
-Occupancy rate (persons) x design loading rate (L/person/day)
-This is estimated by considering the occupancy rate as 2 persons in one unit and design loading rate being 150 L/person/day.
(2) Calculated land application area (m^2)
- Hydraulic load (L/day) x conversion factor (Primary treatment) from Table 2 of Schedule 2 of the GSP 2019, depending on the soil category

LAA for each unit is 113.1 m^2. LAA calculation is shown in Table 5.

Table 5. Land Application Area (LAA) Calculations

Hydraulic Load (L/day)*	Soil Category	Conversion factor	LAA (m^2)
Occupancy rate (persons) x design loading rate (L/person/day) = 2 x 150 = 300	2	0.377	113.1
Note: this is a standard calculation and indicative. LAA Area will vary depending on actual number of tenants at the house.			

A plan of the site is shown in Figure 7. If decomposed unit is installed, which will be under the units and LAA can be next to the unit.

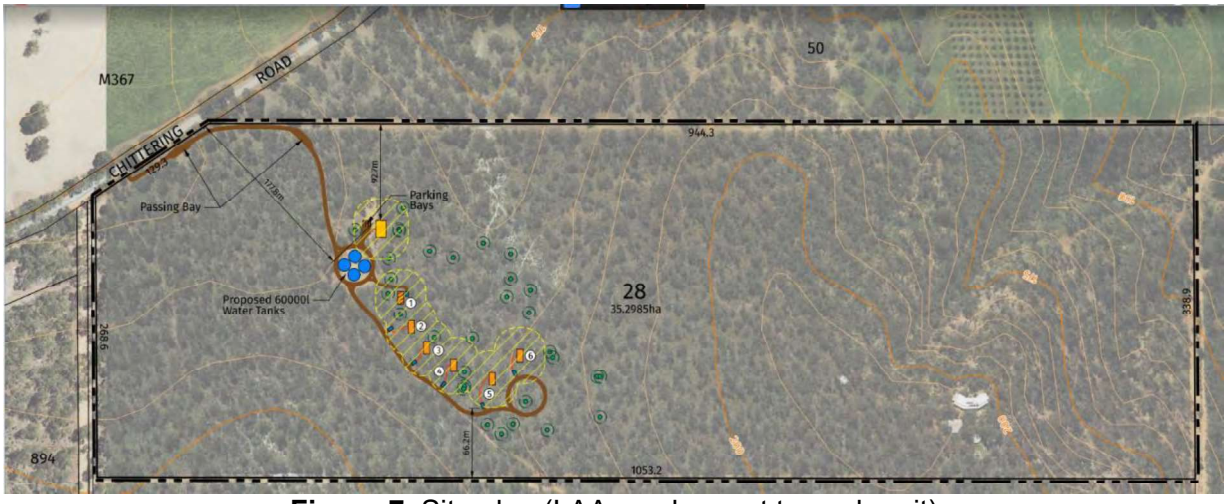


Figure 7. Site plan (LAA can be next to each unit)

The required LAA for primary effluent system is available at the site. Location of LAA remains at the discretion of the future landowner if the total area matches with the calculated LAA.

In considering the Expected Available Area (EAA) for the proposed lot, setback distance from environmental and structural landmarks should be assessed in accordance with the Government Sewerage Policy (GSP) 2019. Which states that any on-site sewerage system is not to be located within:

- A wellhead protection zone or on Crown land within a reservoir protection zone;
- 100 metres of the high-water mark of a reservoir or 100 metres of any bore used for public drinking water supply;
- 30 metres of a private bore used for household/drinking water purposes;
- 100 metres of a waterway or significant wetland and not within a waterway foreshore area or wetland buffer. The separation distance should be measured outwards from the outer edge of riparian or wetland vegetation.
- 100 metres of a drainage system that discharges directly into a waterway or significant wetland without treatment: or
- Any area subject to inundation and/or flooding in a 10 per cent Annual Exceedance Probability (AEP) rainfall event.

8.0 LIMITATION OF USE

The ground is a product of continuing natural and man-made processes and therefore exhibits characteristics and properties which may vary from place to place and can change with time. Geotechnical site investigation involves gathering and assimilating limited facts about these characteristics and properties in order to better understand or predict the behaviour of the ground at a particular site under certain conditions.

This site investigation has been carried out by inspection, using a limited amount of pit excavations, sampling, testing or other means of investigation. Achieving a full coverage of the site to ensure all variations is not practical and is seldom done due to cost constraints as well as the impracticality.

It should be noted that the subsurface conditions encountered by the limited number of pit excavation as part of this geotechnical site investigation represents the ground conditions at the locations where the samples were taken and where tests have been undertaken and as such are an extremely small proportion of the site to be developed.

The facts reported in this document are directly relevant only to the ground at the place where, and time when, the investigation was carried out and are believed to be reported accurately. Given the limited number of test pits and limited field and laboratory testing carried out with respect to the overall site area, variations between investigation locations is likely and ground conditions different to those presented in this report may be present within the subject site area. The risk associated with this variability and the impact it will have on the proposed development should be carefully considered.

The level of geotechnical investigation that has been completed to date is considered appropriate for the project objectives. If the above mentioned client, its subcontractors, agents or employees use this factual information for any other purpose for which it was not intended, then the client, its subcontractors, agents or employees does so at its own risk and Local Geotechnics will not and cannot accept liability in respect of the advice, whether under law of contract, tort or otherwise.

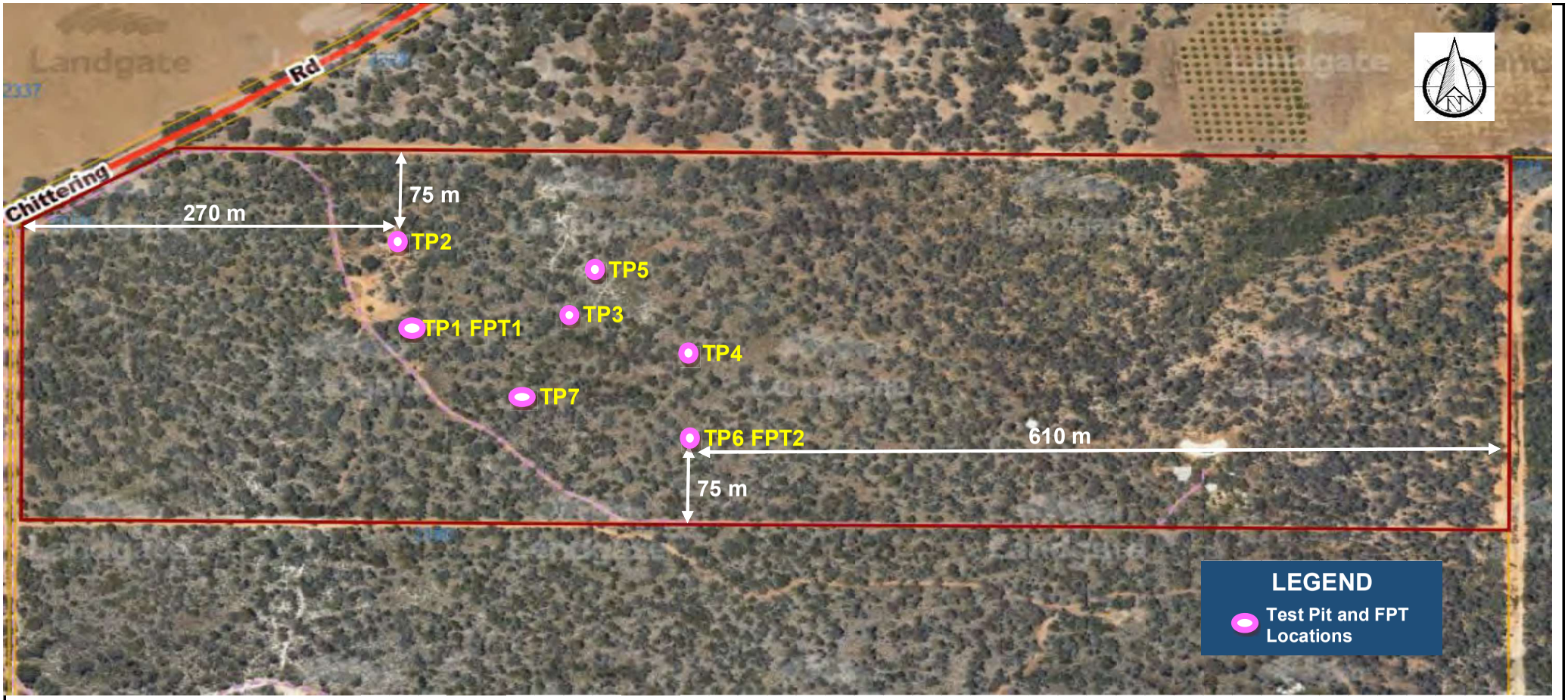
Any interpretation or recommendation given in this report is based on judgement and experience and not on greater knowledge of the facts reported. Local Geotechnics does not represent that the information or interpretation contained in this report addresses completely the existing features, subsurface conditions or ground behaviour at the subject site.

9.0 REFERENCES

- Australian Standard AS 1726-1993 *"Geotechnical Site Investigations".*
- Australian Standard AS 1547-2012, "On-site domestic wastewater management".
- CSIRO publication *"Guide to Home Owners on Foundation Maintenance and Footing Performance"* in Building Technology File Number 18.
- 'Perth Ground Water Atlas' of the Department of Water.
- AS/NZS 1547:2012 On-site domestic wastewater management.
- Department of Water and Environmental Regulations maps and database.
- Department of Planning, Lands and Heritage
- Government of Western Australia Government Sewerage Policy – 2019.
- The Bureau of Meteorology.

APPENDIX A

SITE SKETCH



Site Sketch : Test Pit (TP) and Field Permeability Test (FPT) Locations

Reference:	LG2852023SSE
Client:	Conrad Moller
Project:	Site Soil Evaluation 2178 Chittering Road, Lower Chittering WA

LOCAL GEOTECHNICS
Unit 12, 8 Production Road Canning Vale WA 6155
PO Box 5050, Canning Vale South WA 6155
Phone: 08 9457 3517
E-mail: admin@localgeotechnics.com.au
Web: www.localgeotechnics.com.au

TABLE L1
RECOMMENDED DESIGN LOADING RATES FOR TRENCHES AND BEDS

Soil category	Soil texture	Structure	Indicative permeability (K_{sat})(m/d)	Design loading rate (DLR) (mm/d)			
				Trenches and beds			ETA/ETS beds and trenches
				Primary treated effluent		Secondary treated effluent	
				Conservative rate	Maximum rate		
1	Gravels and sands	Structureless (massive)	> 3.0	20 (see Note 1)	35 (see Note 1)	50 (see Note 1)	(see Note 4)
2	Sandy loams	Weakly structured	> 3.0	20 (see Note 1)	30 (see Note 1)	50 (see Note 1)	
		Massive	1.4 – 3.0	15	25	50	
3	Loams	High/ moderate structured	1.5 – 3.0	15	25	50	
		Weakly structured or massive	0.5 – 1.5	10	15	30	
4	Clay loams	High/ moderate structured	0.5 – 1.5	10	15	30	12
		Weakly structured	0.12 – 0.5	6	10	20	8
		Massive	0.06 – 0.12	4	5	10	5
5	Light clays	Strongly structured	0.12 – 0.5	5	8	12	8
		Moderately structured	0.06 – 0.12	(see Notes 2 & 3)	5	10	5 (see Notes 2, 3, & 5)
		Weakly structured or massive	< 0.06			8	
6	Medium to heavy clays	Strongly structured	0.06 – 0.5				
		Moderately structured	< 0.06				
		Weakly structured or massive	< 0.06				

NOTES:

1 The treatment capacity of the soil and not the hydraulic capacity of the soil or the growth of the clogging layer govern the effluent loading rate in Category 1 and weakly structured Category 2 soils. Land application systems in these soils require design by a suitably qualified and experienced person, and distribution techniques to help achieve even distribution of effluent over the full design surface (see L6.2 and Figure L4 for recommended discharge method by discharge control trench). These soils have low nutrient retention capacities, often allowing accession of nutrients to groundwater.

2 To enable use of such soils for on-site wastewater land application systems, special design requirements and distribution techniques or soil modification procedures will be necessary. For any system designed for these soils, the effluent absorption rate shall be based upon soil permeability testing. Specialist soils advice and special design techniques will be required for clay dominated soils having dispersive (sodic) or shrink/swell behaviour. Such soils shall be treated as Category 6 soils. In most situations, the design will need to rely on more processes than just absorption by the soil.

3 If K_{sat} < 0.06 m/d, a full water balance for the land application can be used to calculate trench/bed size (see Appendix Q).

4 ETA/ETS systems are not normally used on soil Categories 1 to 3.

5 For Category 6 soils ETA/ETS systems are suitable only for use with secondary treated effluent.

APPENDIX B

TEST PIT LOGS, PERMEABILITY TEST CERTIFICATES, PROPOSED LAA AND TABLE L1

ENGINEERING LOG

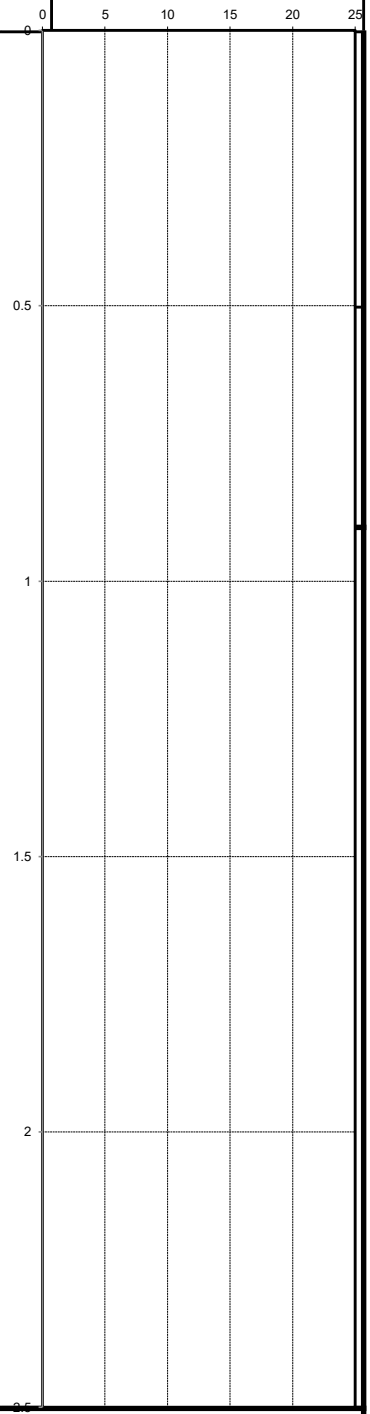
RESULT OF TEST HOLES/PITS

LOCAL GEOTECHNICS
ABN:61 737 984 867
12/8 Production Road, Canning Vale WA 6155
PO Box 5050 Canning Vale South WA 6155
admin@localgeotechnics.com.au

Reference	: LG2852023SSE	Test Pit/BH No.:	TP1
Client	: Conrad Moller	Date Excavated:	4-Sep-2023
Project	: Site Soil Evaluation	Date completed:	4-Sep-2023
Location	: 2178 Chittering Road, Lower Chittering WA	Equipment Type:	1.5t Excavator and FPT
GPS Zone 50	: Northing: 6 509 282 Easting: 4151 92	Water Table:	Not encountered

Depth (m)	RL (m)	Method	Penetration resistance	Sampling Type	Graphic Log	Classification Symbol	Description of Soil Strata	Additional observations
0.0						GP	**TOPSOIL, Sandy GRAVEL -** fine to coarse grained, up to 60 mm in size, subrounded, brown, sand of fine to medium grained, greyish brown, trace of silt and grass roots, moist, medium dense	
0.1						GP	**MIXTURE OF ROCK BOULDERS AND SOIL, Sandy GRAVEL -** fine to coarse grained, up to 60 mm in size, subrounded, brown, sand of fine to medium grained, pale brown, with rock boulders and tree roots, moist, medium dense	
0.5							becomes orange brown	
0.7								
1.0								
1.2							**Terminated at a depth of 1.2 m due to bucket refusal on rock**	
1.5								
2.0								
2.5								

Dynamic Cone Penetrometer Test (Blows/100mm)



Notes:

Sampling Type :
B - Bulk/Disturbed Sample,
UD - Undisturbed Sample

Method:
HA - Hand Auger
E - Excavator
BH - Backhoe Bucket

Moisture:
D - Dry
M - Moist
W - Wet

Symbols:
W_L - Plastic Limit
W_P - Plastic Limit

Logged : R Hai
Checked: H Meer

ENGINEERING LOG

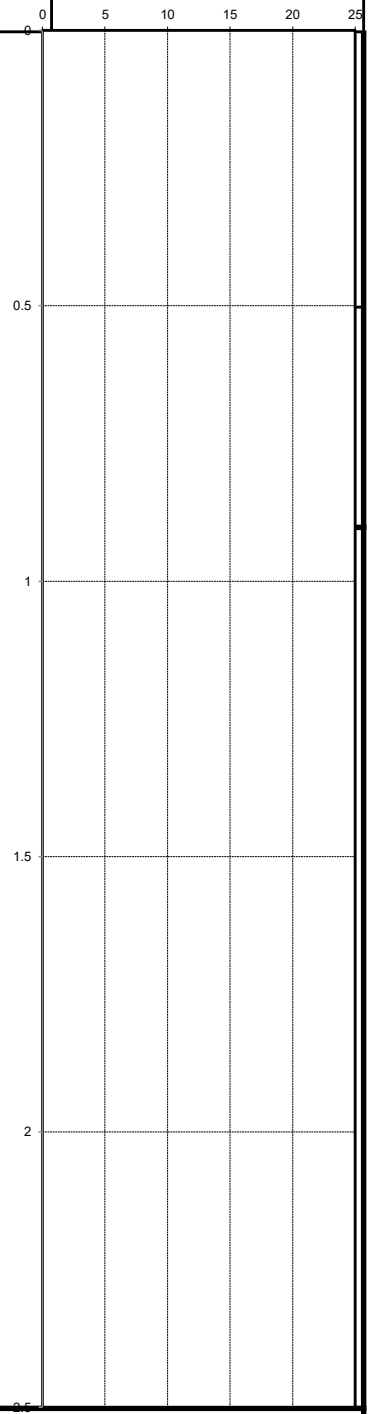
RESULT OF TEST HOLES/PITS

LOCAL GEOTECHNICS
ABN:61 737 984 867
12/8 Production Road, Canning Vale WA 6155
PO Box 5050 Canning Vale South WA 6155
admin@localgeotechnics.com.au

Reference	: LG2852023SSE	Test Pit/BH No.:	TP2
Client	: Conrad Moller	Date Excavated:	4-Sep-2023
Project	: Site Soil Evaluation	Date completed:	4-Sep-2023
Location	: 2178 Chittering Road, Lower Chittering WA	Equipment Type:	1.5t Excavator and FPT
GPS Zone 50	: Northing: 6 509 308 Easting: 415 263	Water Table:	Not encountered

Depth (m)	RL (m)	Method	Penetration resistance	Sampling Type	Graphic Log	Classification Symbol	Description of Soil Strata	Additional observations
0.0						GP	**TOPSOIL, Sandy GRAVEL -** fine to coarse grained, up to 60 mm in size, subrounded, brown, sand of fine to medium grained, greyish brown, trace of silt and grass roots, moist, medium dense	
0.1							**Terminated at a depth of 0.1 m due to bucket refusal on rock**	
0.5								
1.0								
1.5								
2.0								
2.5								

Dynamic Cone Penetrometer Test (Blows/100mm)



Notes:

Sampling Type :
B - Bulk/Disturbed Sample,
UD - Undisturbed Sample

Method:
HA - Hand Auger
E - Excavator
BH - Backhoe Bucket

Moisture:
D - Dry
M - Moist
W - Wet

Symbols:
W_L - Plastic Limit
W_P - Plastic Limit

Logged : R Hai
Checked: H Meer

ENGINEERING LOG

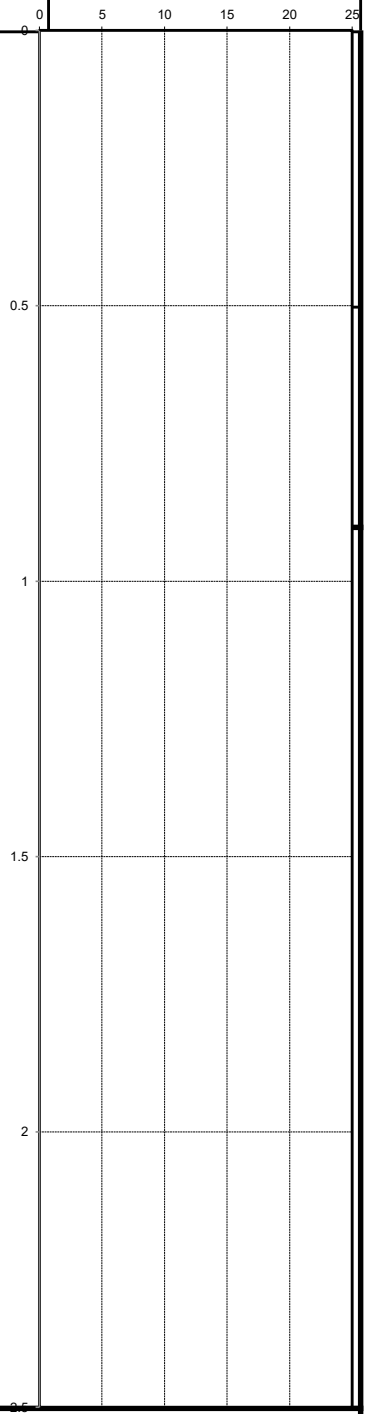
RESULT OF TEST HOLES/PITS

LOCAL GEOTECHNICS
ABN:61 737 984 867
12/8 Production Road, Canning Vale WA 6155
PO Box 5050 Canning Vale South WA 6155
admin@localgeotechnics.com.au

Reference	: LG2852023SSE	Test Pit/BH No.:	TP3
Client	: Conrad Moller	Date Excavated:	4-Sep-2023
Project	: Site Soil Evaluation	Date completed:	4-Sep-2023
Location	: 2178 Chittering Road, Lower Chittering WA	Equipment Type:	1.5t Excavator and FPT
GPS Zone 50	: Northing: 6 509 308 Easting: 415 263	Water Table:	Not encountered

Depth (m)	RL (m)	Method	Penetration resistance	Sampling Type	Graphic Log	Classification Symbol	Description of Soil Strata	Additional observations
0.0						GP	**TOPSOIL, Sandy GRAVEL -** fine to coarse grained, up to 60 mm in size, subrounded, brown, sand of fine to medium grained, greyish brown, trace of silt and grass roots, moist, loose	
0.1								
						GP	**MIXTURE OF ROCK BOULDERS AND SOIL, Sandy GRAVEL -** fine to coarse grained, up to 60 mm in size, subrounded, brown, sand of fine to medium grained, pale brown, with rock boulders and tree roots, moist, medium dense	
0.4				B				
0.5							**Terminated at a depth of 0.4 m due to bucket refusal on rock**	
1.0								
1.5								
2.0								
2.5								

Dynamic Cone Penetrometer Test (Blows/100mm)



Notes:

Sampling Type :
B - Bulk/Disturbed Sample,
UD - Undisturbed Sample

Method:
HA - Hand Auger
E - Excavator
BH - Backhoe Bucket

Moisture:
D - Dry
M - Moist
W - Wet

Symbols:
W_L - Plastic Limit
W_P - Plastic Limit

Logged : R Hai
Checked: H Meer

ENGINEERING LOG

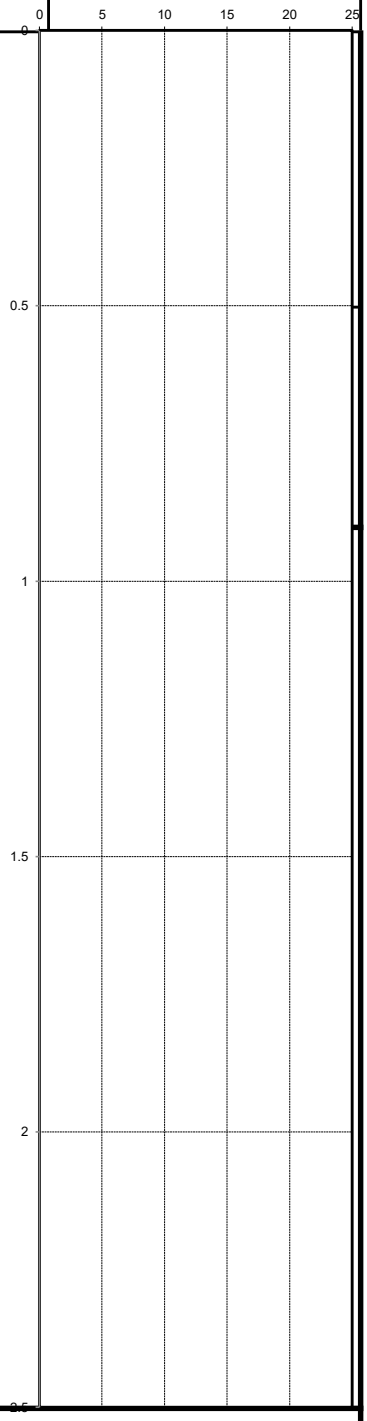
RESULT OF TEST HOLES/PITS

LOCAL GEOTECHNICS
ABN:61 737 984 867
12/8 Production Road, Canning Vale WA 6155
PO Box 5050 Canning Vale South WA 6155
admin@localgeotechnics.com.au

Reference	: LG2852023SSE	Test Pit/BH No.:	TP4
Client	: Conrad Moller	Date Excavated:	4-Sep-2023
Project	: Site Soil Evaluation	Date completed:	4-Sep-2023
Location	: 2178 Chittering Road, Lower Chittering WA	Equipment Type:	1.5t Excavator and FPT
GPS Zone 50	: Northing: 6 509 264 Easting: 415 271	Water Table:	Not encountered

Depth (m)	RL (m)	Method	Penetration resistance	Sampling Type	Graphic Log	Classification Symbol	Description of Soil Strata	Additional observations
0.0						GP	**TOPSOIL, Sandy GRAVEL -** fine to coarse grained, up to 60 mm in size, subrounded, brown, sand of fine to medium grained, greyish brown, trace of silt and grass roots, moist, loose	
0.1								
0.4						GP	**Sandy GRAVEL -** fine to coarse grained, up to 60 mm in size, subrounded, brown, sand of fine to medium grained, pale brown, with cobbles and tree roots, moist, loose	
0.5							**Terminated at a depth of 0.4 m due to bucket refusal on rock**	
1.0								
1.5								
2.0								
2.5								

Dynamic Cone Penetrometer Test (Blows/100mm)



Notes:

Sampling Type :
B - Bulk/Disturbed Sample,
UD - Undisturbed Sample

Method:
HA - Hand Auger
E - Excavator
BH - Backhoe Bucket

Moisture:
D - Dry
M - Moist
W - Wet

Symbols:
W_L - Plastic Limit
W_P - Plastic Limit

Logged : R Hai
Checked: H Meer

ENGINEERING LOG

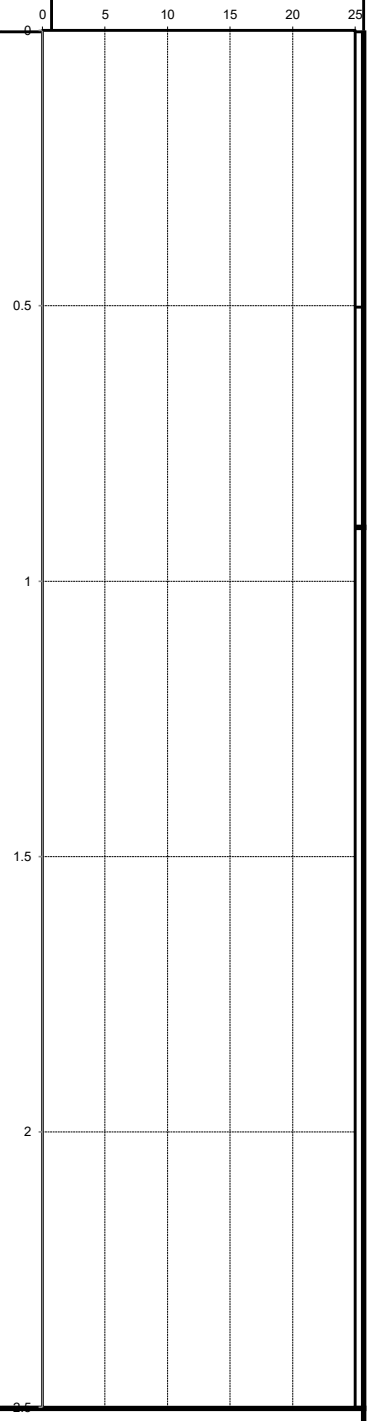
RESULT OF TEST HOLES/PITS

LOCAL GEOTECHNICS
ABN:61 737 984 867
12/8 Production Road, Canning Vale WA 6155
PO Box 5050 Canning Vale South WA 6155
admin@localgeotechnics.com.au

Reference	: LG2852023SSE	Test Pit/BH No.:	TP5
Client	: Conrad Moller	Date Excavated:	4-Sep-2023
Project	: Site Soil Evaluation	Date completed:	4-Sep-2023
Location	: 2178 Chittering Road, Lower Chittering WA	Equipment Type:	1.5t Excavator and FPT
GPS Zone 50	: Northing: 6 509 331 Easting: 415 309	Water Table:	Not encountered

Depth (m)	RL (m)	Method	Penetration resistance	Sampling Type	Graphic Log	Classification Symbol	Description of Soil Strata	Additional observations
0.0						SP	**TOPSOIL, Gravelly SAND -** fine to medium grained, grey, gravel of fine to coarse grained, up to 25 mm in size, subangular, black, trace of silt and grass roots, moist, loose	
0.1								
0.4						SP	**Gravelly SAND -** fine to medium grained, pale grey, gravel of fine to coarse grained, up to 25 mm in size, subangular, black, trace of cobbles and tree roots, moist, loose	
0.5							**Terminated at a depth of 0.4 m due to bucket refusal on rock**	
1.0								
1.5								
2.0								
2.5								

Dynamic Cone Penetrometer Test (Blows/100mm)



Notes:

Sampling Type :
B - Bulk/Disturbed Sample,
UD - Undisturbed Sample

Method:
HA - Hand Auger
E - Excavator
BH - Backhoe Bucket

Moisture:
D - Dry
M - Moist
W - Wet

Symbols:
W_L - Plastic Limit
W_P - Plastic Limit

Logged : R Hai
Checked: H Meer

ENGINEERING LOG

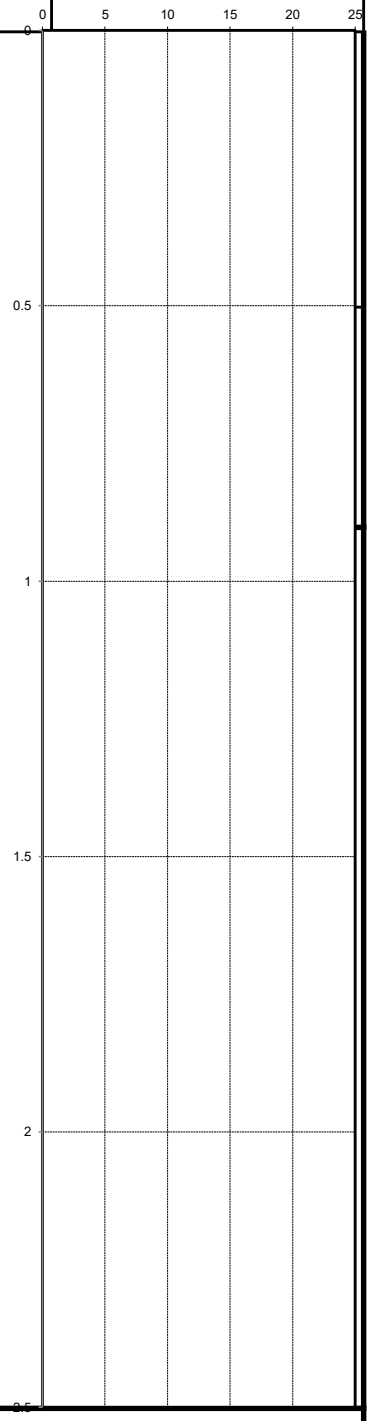
RESULT OF TEST HOLES/PITS

LOCAL GEOTECHNICS
ABN:61 737 984 867
12/8 Production Road, Canning Vale WA 6155
PO Box 5050 Canning Vale South WA 6155
admin@localgeotechnics.com.au

Reference	: LG2852023SSE	Test Pit/BH No.:	TP6
Client	: Conrad Moller	Date Excavated:	4-Sep-2023
Project	: Site Soil Evaluation	Date completed:	4-Sep-2023
Location	: 2178 Chittering Road, Lower Chittering WA	Equipment Type:	1.5t Excavator and FPT
GPS Zone 50	: Northing: 6 509 187 Easting: 415 348	Water Table:	Not encountered

Depth (m)	RL (m)	Method	Penetration resistance	Sampling Type	Graphic Log	Classification Symbol	Description of Soil Strata	Additional observations
0.0						GP	**TOPSOIL, Sandy GRAVEL -** fine to coarse grained, up to 60 mm in size, subrounded, brown, sand of fine to medium grained, greyish brown, trace of silt and grass roots, moist, very loose	
0.1						GP	**Sandy GRAVEL -** fine to coarse grained, up to 60 mm in size, subrounded, brown, sand of fine to medium grained, pale brown, with cobbles and tree roots, moist, loose	
0.5							**Terminated at a depth of 0.5 m due to bucket refusal on rock**	
1.0								
1.5								
2.0								
2.5								

Dynamic Cone Penetrometer Test (Blows/100mm)



Notes:

Sampling Type :
B - Bulk/Disturbed Sample,
UD - Undisturbed Sample

Method:
HA - Hand Auger
E - Excavator
BH - Backhoe Bucket

Moisture:
D - Dry
M - Moist
W - Wet

Symbols:
W_L - Plastic Limit
W_P - Plastic Limit

Logged : R Hai
Checked: H Meer

ENGINEERING LOG

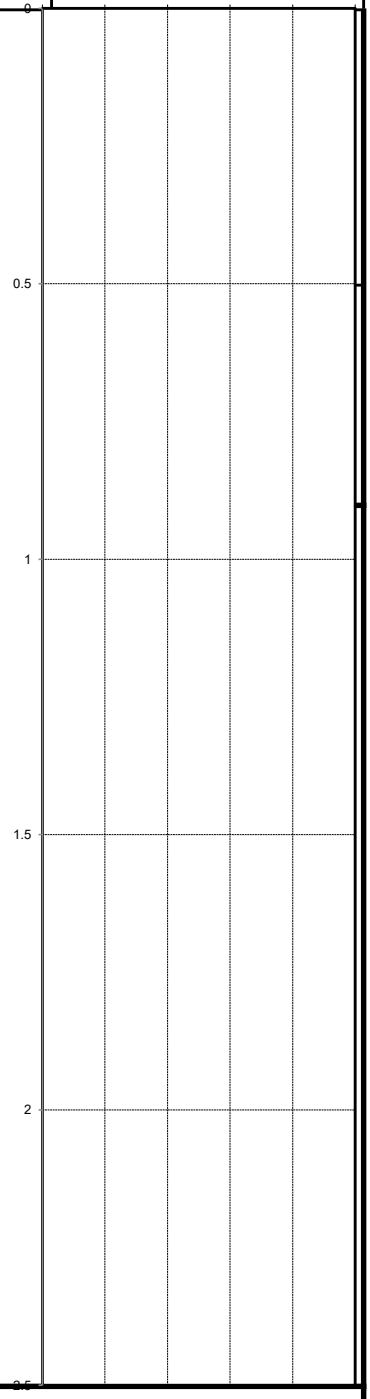
RESULT OF TEST HOLES/PITS

LOCAL GEOTECHNICS
ABN:61 737 984 867
12/8 Production Road, Canning Vale WA 6155
PO Box 5050 Canning Vale South WA 6155
admin@localgeotechnics.com.au

Reference	: LG2852023SSE	Test Pit/BH No.:	TP7
Client	: Conrad Moller	Date Excavated:	4-Sep-2023
Project	: Site Soil Evaluation	Date completed:	4-Sep-2023
Location	: 2178 Chittering Road, Lower Chittering WA	Equipment Type:	1.5t Excavator and FPT
GPS Zone 50	: Northing: 6 509 237 Easting: 415 249	Water Table:	Not encountered

Depth (m)	RL (m)	Method	Penetration resistance	Sampling Type	Graphic Log	Classification Symbol	Description of Soil Strata	Additional observations
0.0						GP	**TOPSOIL, Sandy GRAVEL -** fine to coarse grained, up to 60 mm in size, subrounded, brown, sand of fine to medium grained, greyish brown, trace of silt and grass roots, moist, loose	
0.1						GP	**Sandy GRAVEL -** fine to coarse grained, up to 60 mm in size, subrounded, brown, sand of fine to medium grained, pale brown, with cobbles and tree roots, moist, loose	
0.5							**Terminated at a depth of 0.5 m due to bucket refusal on rock**	
1.0								
1.5								
2.0								
2.5								

Dynamic Cone Penetrometer Test (Blows/100mm)



Notes:

Sampling Type :
B - Bulk/Disturbed Sample,
UD - Undisturbed Sample

Method:
HA - Hand Auger
E - Excavator
BH - Backhoe Bucket

Moisture:
D - Dry
M - Moist
W - Wet

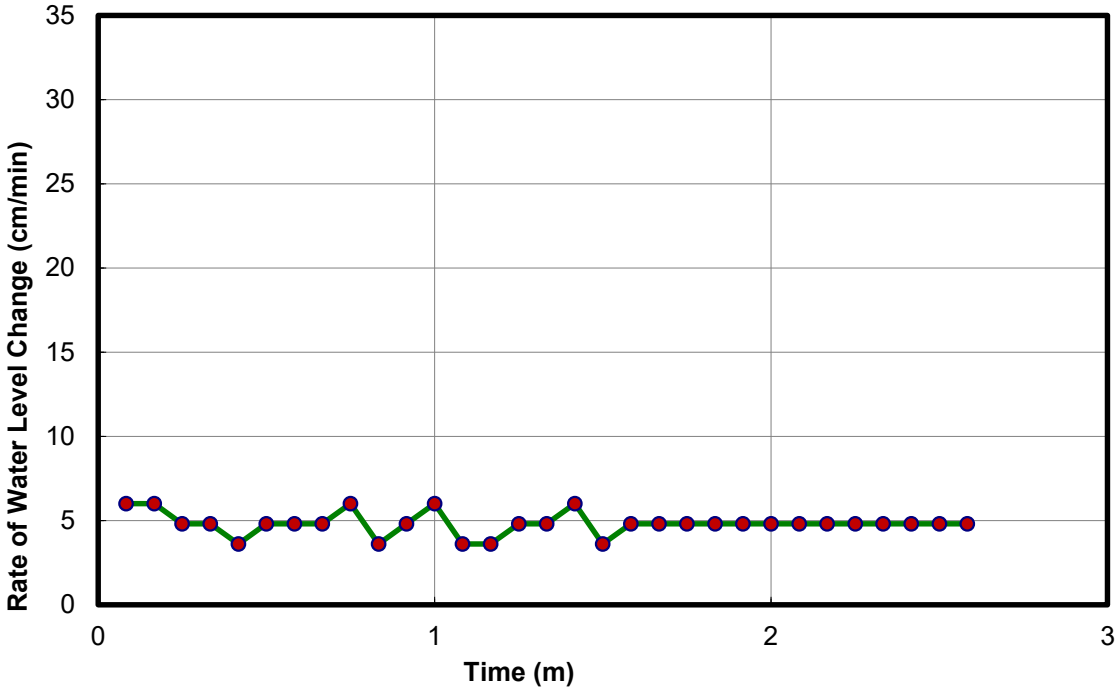
Symbols:
W_L - Plastic Limit
W_P - Plastic Limit

Logged : R Hai
Checked: H Meer

INFILTRATION TEST CERTIFICATES (AS1547)

ABN: 61 737 984 867
PO Box 5050 Canning Vale South
WA 6155
admin@localgeotechnics.com.au

Reference	LG2852023SSE			Test ID	FPT1
Client	Conrad Moller			Date Tested	4 September 2023
Project	Site Soil Evaluation			Date Completed	4 September 2023
Location	2178 Chittering Road, Lower Chittering WA			Instrument Type	Guelph Permeameter
Position	Northing:	6 509 282	Easting: 415 181	Tested by	R Hai



Notes: Test was conducted at a depth of 0.3 m from the existing surface level

Water Hydraulic conductivity K_{fs}: **3.0E-05** **m/sec**
2.6E+00 **m/day**

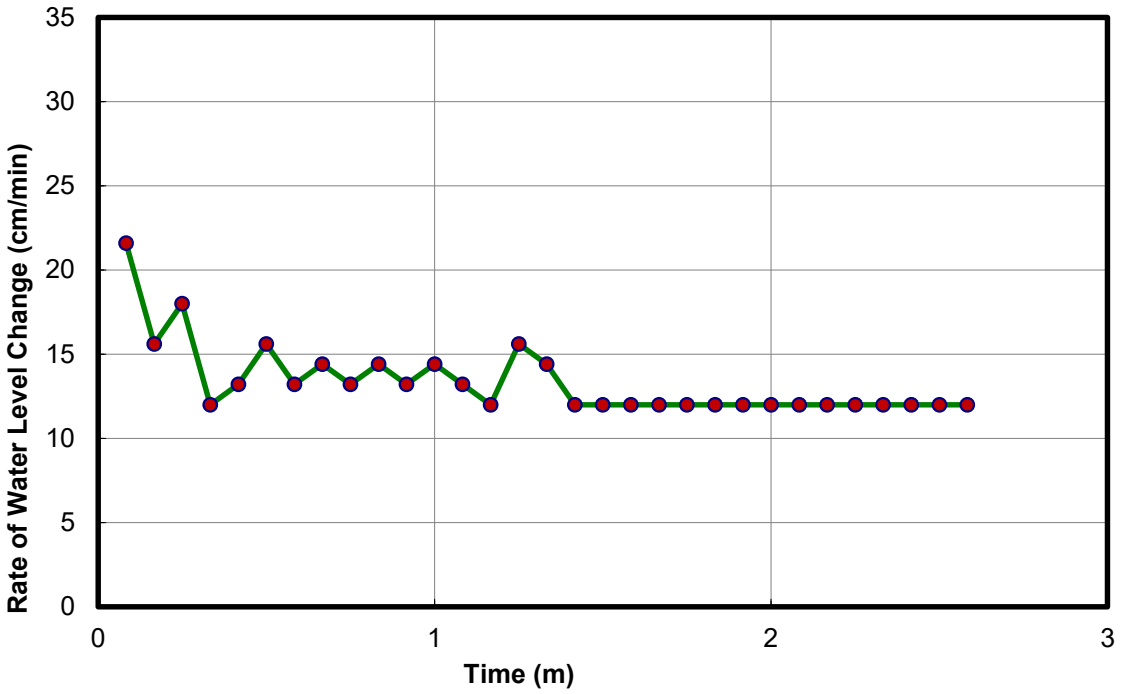
Signatory: *Dr. Harun Meer*

Date: 05 September 2023

INFILTRATION TEST CERTIFICATES (AS1547)

ABN: 61 737 984 867
PO Box 5050 Canning Vale South
WA 6155
admin@localgeotechnics.com.au

Reference	LG2852023SSE			Test ID	FPT2
Client	Conrad Moller			Date Tested	4 September 2023
Project	Site Soil Evaluation			Date Completed	4 September 2023
Location	2178 Chittering Road, Lower Chittering WA			Instrument Type	Guelph Permeameter
Position	Northing:	6 509 190	Easting: 415 346	Tested by	R Hai



Notes: Test was conducted at a depth of 0.3 m from the existing surface level

Water Hydraulic conductivity K_{fs}: **3.8E-05** **m/sec**

3.2E+00 **m/day**

Signatory: *Dr. Harun Meer*

Date: 05 September 2023

APPENDIX C

SITE PHOTOS

Photo 1. General Site Condition at Test Location 01

Photo 2. General Site Condition at Test Location 03

Photo 3. Excavating Test Pit at Test Location 01 (TP1)

Photo 4. Spoil from Test Pit (TP1)

Photo 5. Soil Profile (TP1)

Photo 6. Excavating Test Pit at Test Location 03 (TP3)

Photo 7. Soil Profile (TP3)

Photo 8. Excavating Test Pit at Test Location 06 (TP6)

Photo 9. Soil Profile at Test Location 06 (TP6)

Photo 10. Soil Profile at Test Location 07 (TP7)

Photo 11. Rock Outcrops at Test Location 02 (TP2)

Photo 12. Conducting FPT at Test Location 01 (FPT1)

APPENDIX D

LABORATORY TEST CERTIFICATES

Material Test Report

LOCAL GEOTECHNICS

Local Geotechnics Pty Ltd
Canning Vale Laboratory
Unit 9/8 Production Road Canning Vale WA 6155
Phone: (08) 9457 3517
Email: admin@localgeotechnics.com.au

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Mark Matthews
Laboratory Manager
Laboratory Accreditation Number: 20038

Report Number: **LG/537-1**
Issue Number: 1
Date Issued: 11/09/2023
Client: Local Geotechnics
U12/8 Production Road, Canning Vale WA 6155
Contact: Harun Meer
Project Number: LG/537
Project Name: Conrad Moller
Project Location: 2178 Chittering Road, Lower Chittering WA
Client Reference: LG2852023SC & SSE
Work Request: 337
Sample Number: S23337A
Date Sampled: 05/09/2023
Dates Tested: 06/09/2023 - 08/09/2023
Sampling Method: Sampled by Client

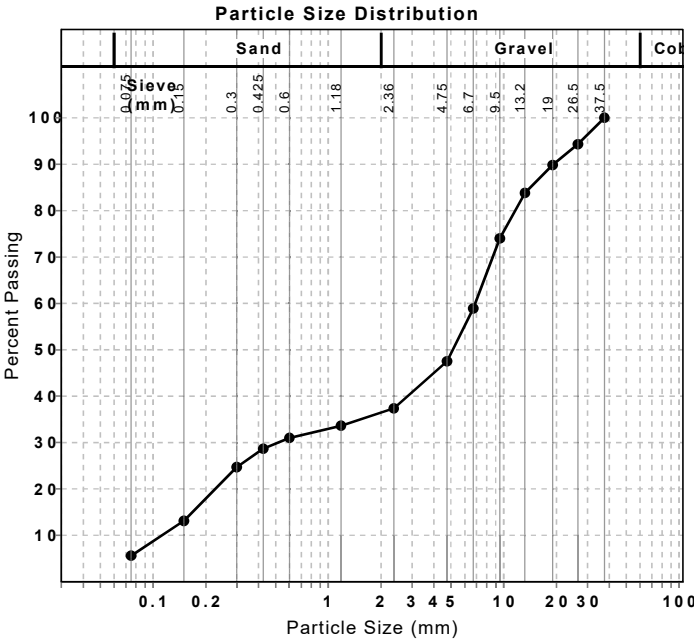
The results apply to the sample as received

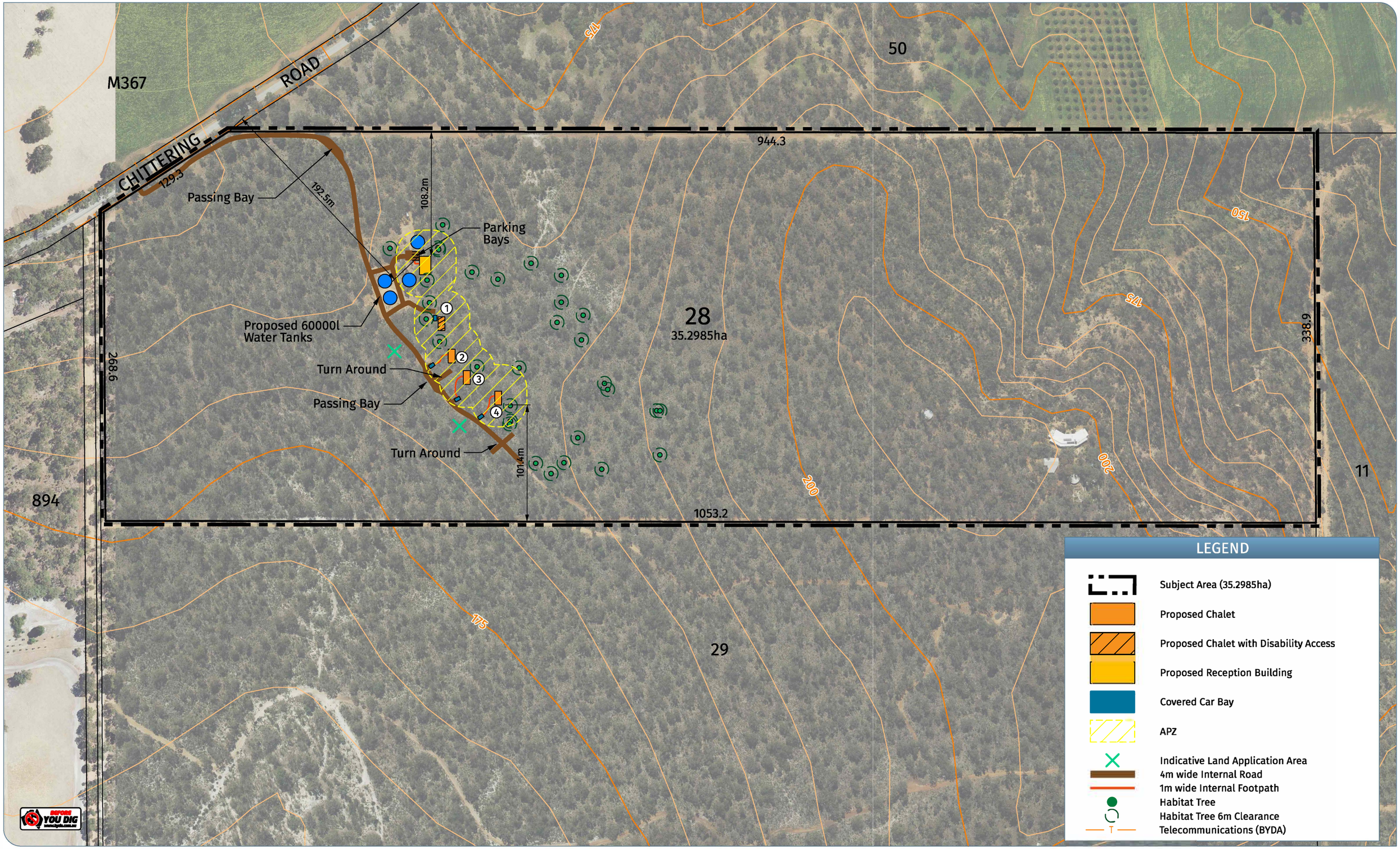
Preparation Method: In accordance with the test method
Remarks: All Project and sampling details are provided by the Client. Local Geotechnics Laboratory is not responsible for the accuracy of these Details.
Site Selection: Selected by Client
Sample Location: **TP3, Depth: 0.3 - 0.4m**

Particle Size Distribution (AS1289 3.6.1)			
Sieve	Passed %	Passing Limits	
37.5 mm	**100**		
26.5 mm	**94**		
19 mm	**90**		
13.2 mm	**84**		
9.5 mm	**74**		
6.7 mm	**59**		
4.75 mm	**48**		
2.36 mm	**37**		
1.18 mm	**34**		
0.6 mm	**31**		
0.425 mm	**29**		
0.3 mm	**25**		
0.15 mm	**13**		
0.075 mm	**6**		

Emerson Class Number of a Soil (AS 1289 3.8.1)		Min	Max
Emerson Class	**2**		
Soil Description			
Nature of Water	Distilled		
Temperature of Water (°C)	19.0		

The sample was tested by remoulding the material into 3 x 3mm balls. The material passing 4.75mm and retained 2.36mm sieves was unsuitable for testing.





SITE PLAN

Lot 28 (No. 2178) Chittering Road, LOWER CHITTERING

Plan No.	23760-01	
Date	21/11/24	
Drawn	NP	
Checked	AR	
Revision	E	
Scale	1:3000@A3	0 40m 80m

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BUNBURY WA 6230
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W: www.harleydykstra.com.au
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NOTE: This plan has been prepared for planning purposes. Areas, Contours and Dimensions shown are subject to survey

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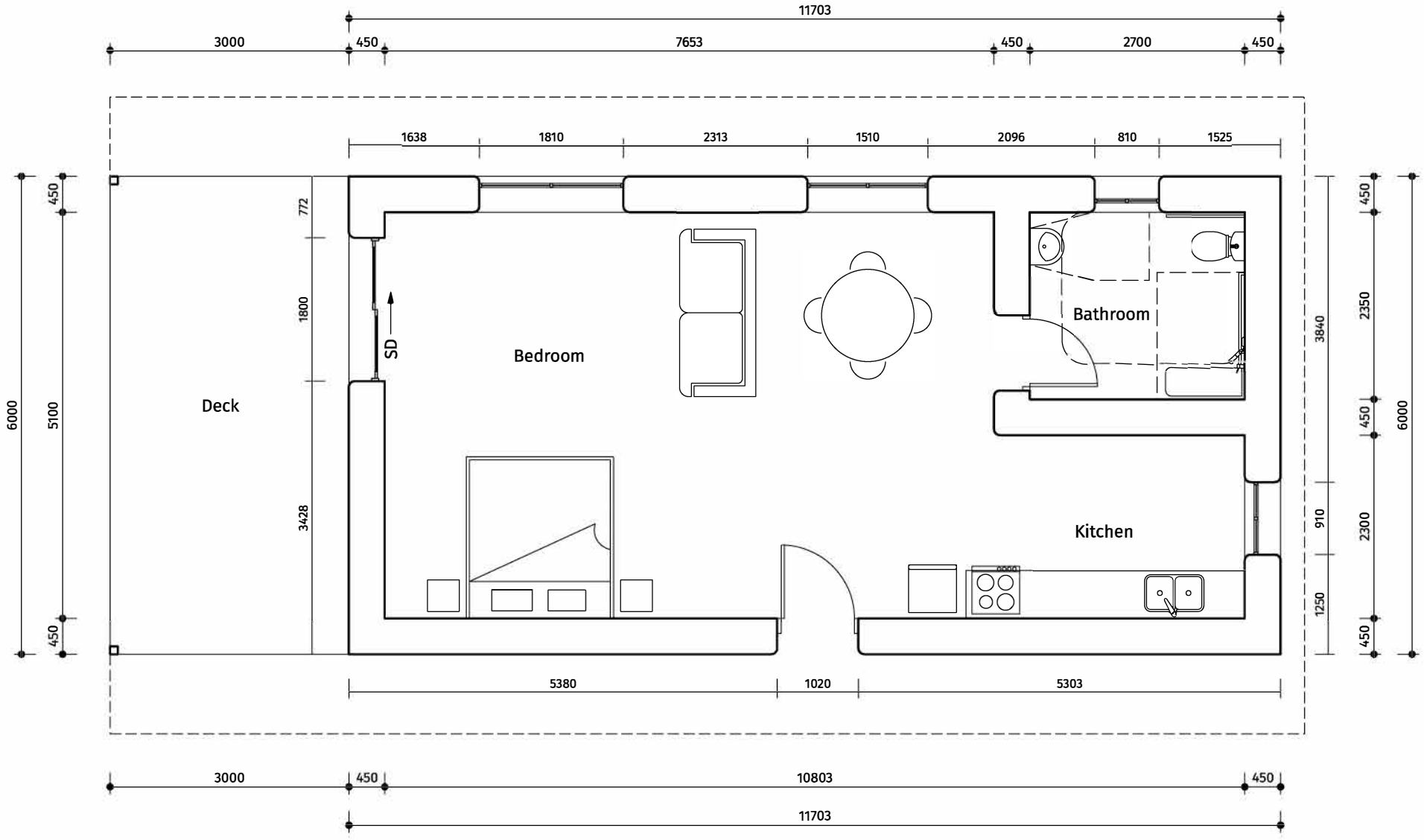

FLOOR PLAN
1:50

CABIN FLOOR PLAN - ACCESSIBLE UNIT

Lot 28 (No. 2178) Chittering Road, LOWER CHITTERING

Plan No.	23760-03
Date	06/11/23
Drawn	BdR
Checked	AR
Revision	B
Scale	1:50@A3

0 0.5m 1m 1.5m

NOTE: This plan has been prepared for planning purposes. Areas, Contours and Dimensions shownare subject to survey

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BUNBURY WA 6230
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W: www.harleydykstra.com.au
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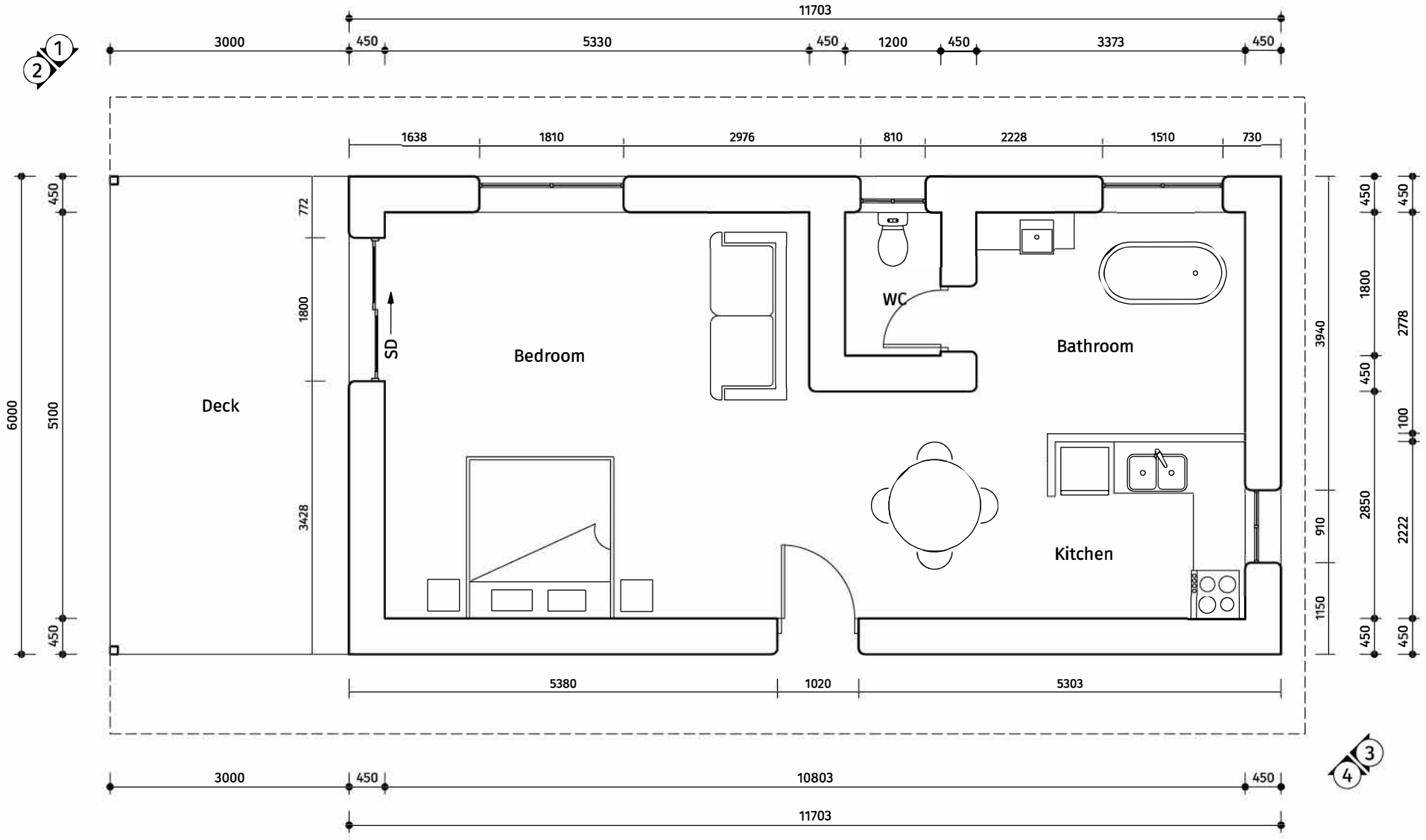

FLOOR PLAN
1:50

CABIN FLOOR PLAN

Lot 28 (No. 2178) Chittering Road,
LOWER CHITTERING

Sheet 1 of 2

Plan No.	23760-02.1	
Date	06/11/23	
Drawn	BdR	
Checked	AR	
Revision	C	
Scale	1:50@A3	0 0.5m 1m 1.5m

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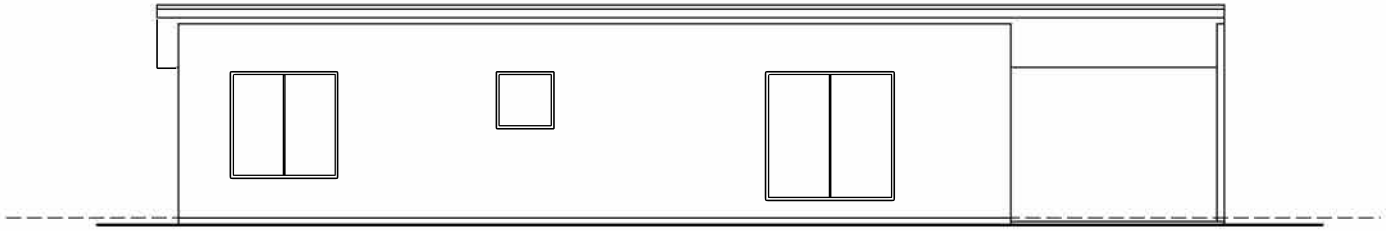
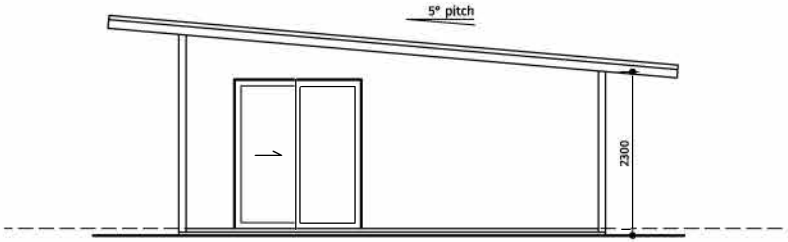
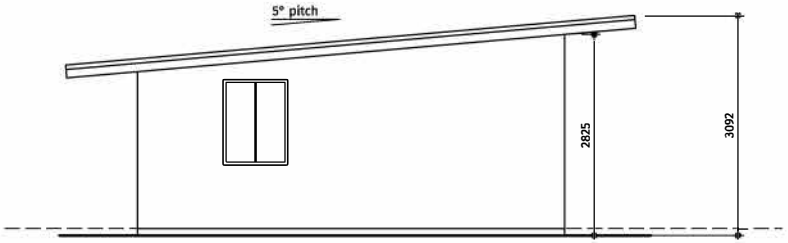


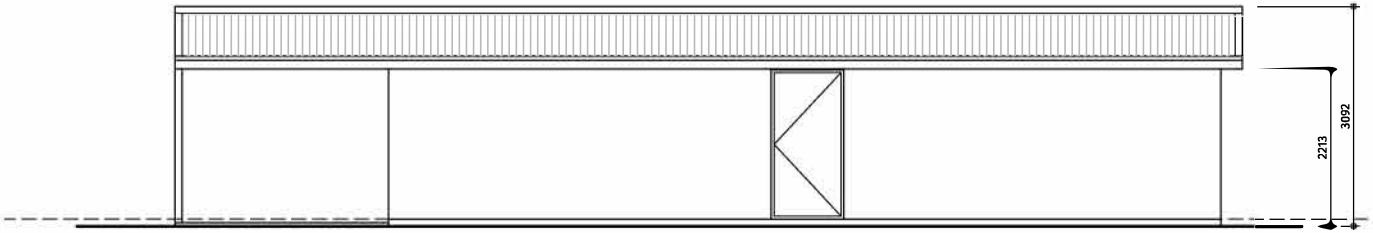
ELEVATION 1
1:75



ELEVATION 2
1:75



ELEVATION 3
1:75



ELEVATION 4
1:75

CABIN ELEVATIONS

Lot 28 (No. 2178) Chittering Road,
LOWER CHITTERING

Sheet 2 of 2

Plan No.	23760-02.2
Date	06/11/23
Drawn	BdR
Checked	AR
Revision	C
Scale	1:75@A3

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0 1m 2m

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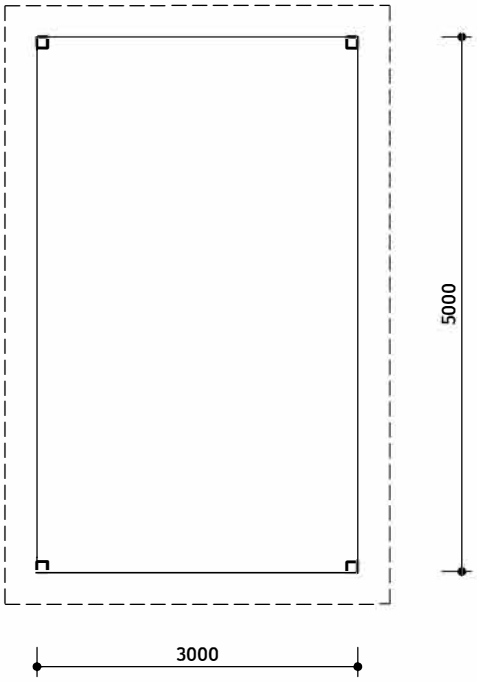
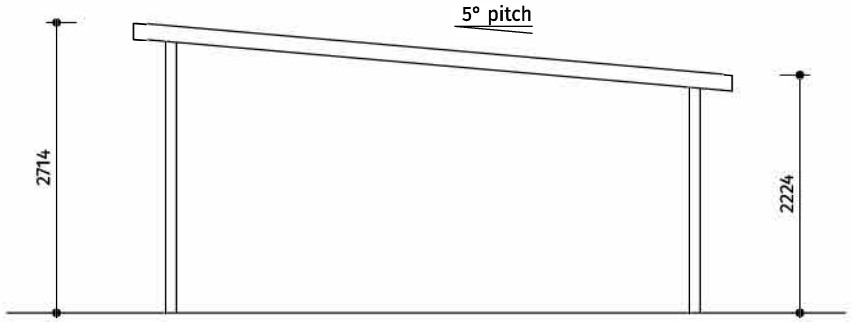
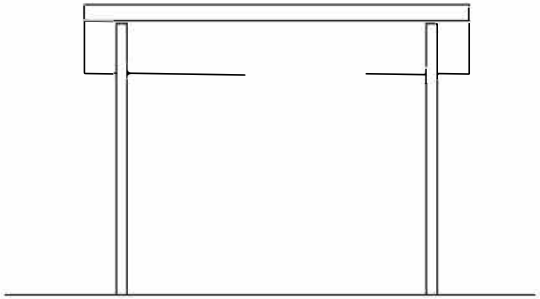


FLOOR PLAN
1:50



SIDE ELEVATION
1:50



FRONT ELEVATION
1:50

CAR BAY PLAN & ELEVATION

Lot 28 (No. 2178) Chittering Road, LOWER CHITTERING

Plan No.	23760-05	
Date	03/10/23	
Drawn	BdR	
Checked	AR	
Revision	A	
Scale	1:50@A3	0 0.5m 1m 1.5m

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W: www.harleydykstra.com.au
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Harley Dykstra
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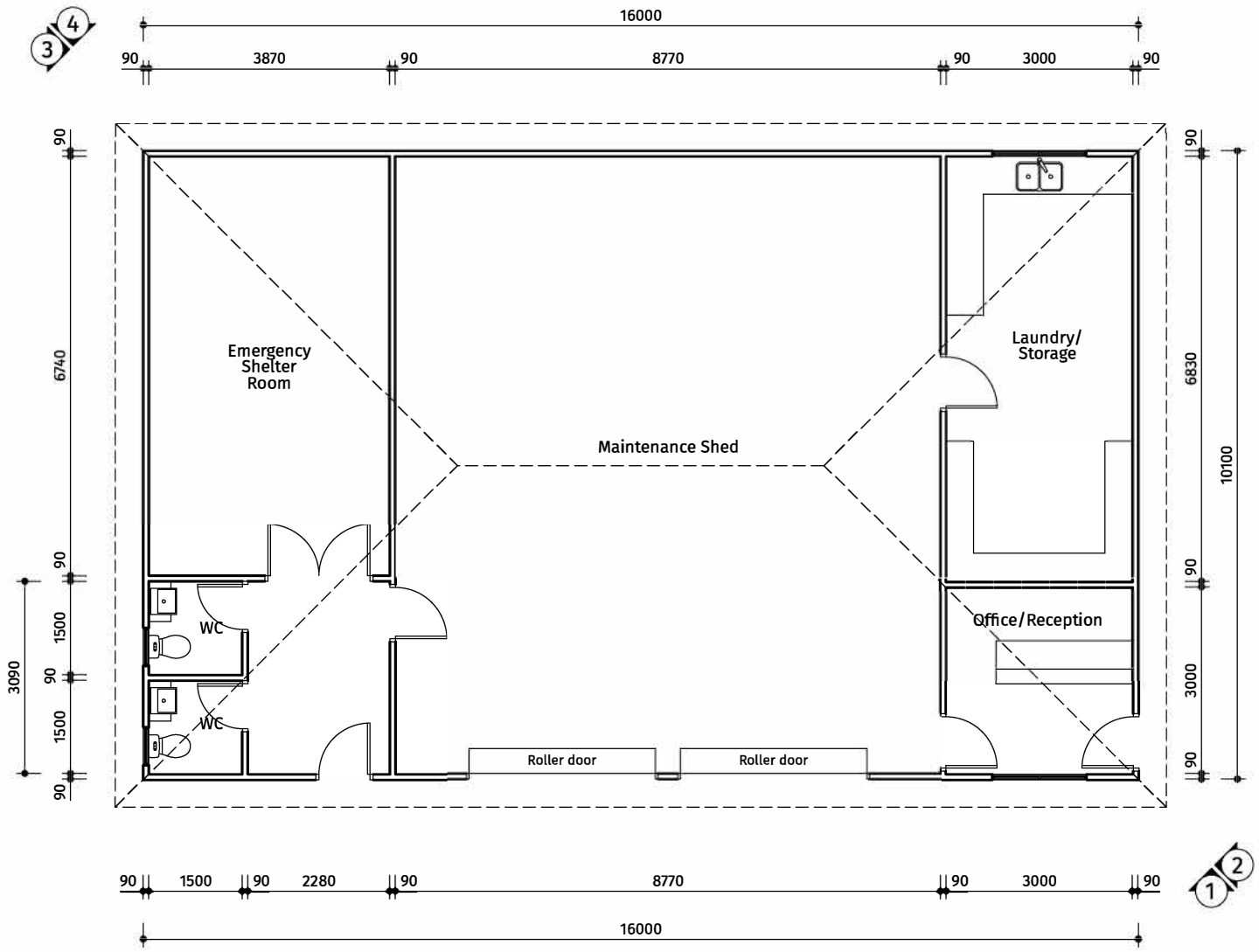

FLOOR PLAN
1:75

SHELTER FLOOR PLAN

Lot 28 (No. 2178) Chittering Road, LOWER CHITTERING

Sheet 1 of 2

Plan No.	23760-03.1
Date	21/09/23
Drawn	BdR
Checked	AR
Revision	A
Scale	1:75@A3

0 1m 2m

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BUNBURY WA 6230
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ALBANY | BUNBURY | BUSSELTON | FORRESTDALE | PERTH

NOTE: This plan has been prepared for planning purposes. Areas, Contours and Dimensions shown are subject to survey

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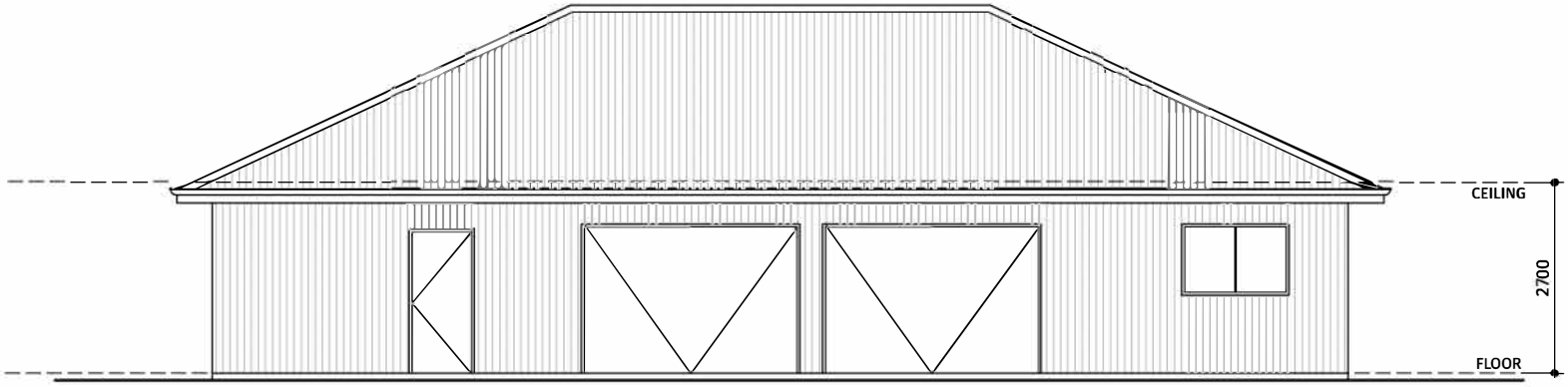
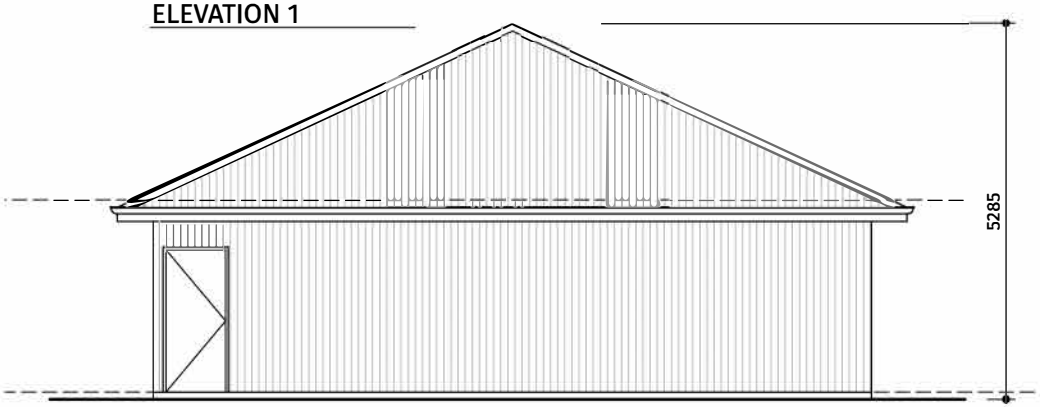
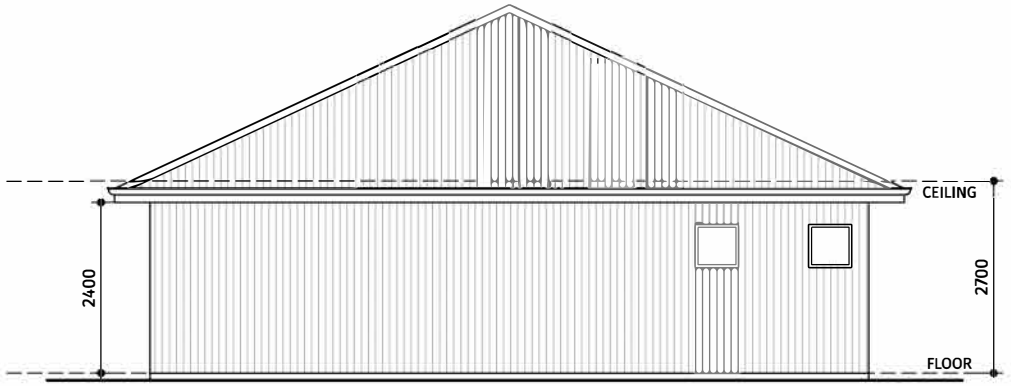


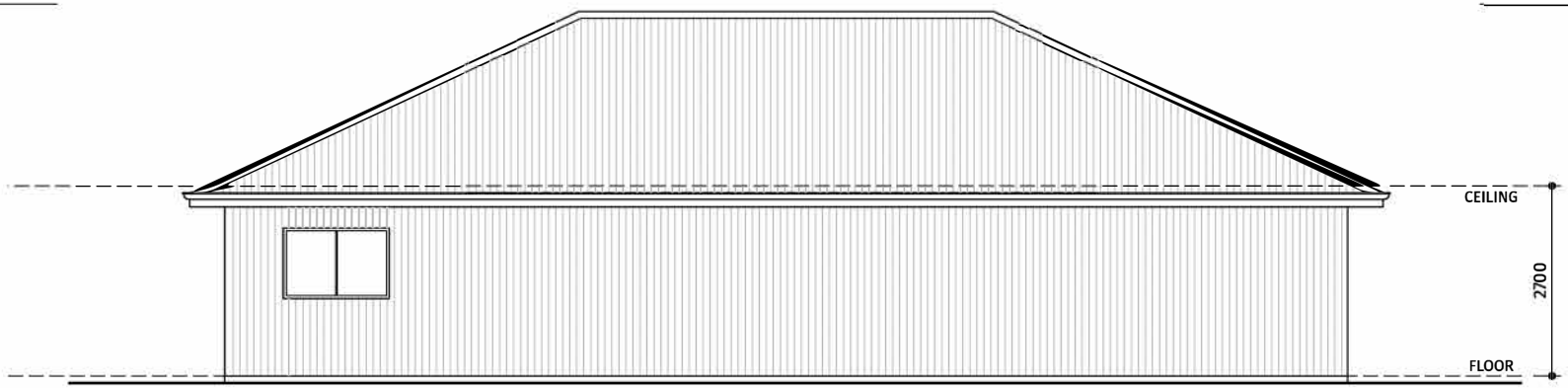
ELEVATION 1



ELEVATION 2



ELEVATION 3



ELEVATION 4

SHELTER ELEVATIONS

Lot 28 (No. 2178) Chittering Road,
LOWER CHITTERING

Sheet 2 of 2

Plan No.	23760-03.2	
Date	21/09/23	
Drawn	BdR	
Checked	AR	
Revision	A	
Scale	1:75@A3	0 1m 2m

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AGENCY SUBMISSIONS			
Submitter	**Comment**	**Proponent Response**	**Shire Officer Response**
Department of Health	Thank you for your email dated 17 July 2024, requesting comment from the Department of Health (DoH) on the above proposal. The DoH provides the following comments: **1. Wastewater Management** The DoH advises that the disposal of wastewater generated on-site is required to comply with the *Health (Treatment of Sewage and Disposal of Effluent and Liquid Waste) Regulations 1974*, and the *Government Sewage Policy 2019*. 1. A secondary on-site wastewater treatment is recommended. This system is different to an aerobic treatment unit and will be required as the proposed development is located within a sewage sensitive area. 2. If composting toilets are proposed it is recommended the proponent contact the Department of Water and Environmental Regulation (DWER) to determine if these will exceed DWER's nutrient requirements, as this may require a separate wastewater treatment system for grey water. 3. The test pits for the land application areas had very high rock content that ranged from 0.1m – 0.5m depth. Only test pit one met 1.2m depth before refusal. The minimum depth is 1.5m as it would be assumed the water table or perched water would be near this barrier. Therefore, permeability and vertical separation will need to meet the *Government Sewerage Policy 2019* requirements and may require engineering or other measures to manage the disposal of wastewater. 4. The Site and Soil Evaluation was undertaken in early September 2023. July and August were drier than normal and there is a need to allow for average rainfall years. The report from Local Geotechnics recommends conducting a water table assessment during winter (rainy season) to ensure the minimum 1.5m vertical separation distance is met. 5. One- and two-bedroom dwellings or accommodation units need to be sized to the Regulatory volume, not the Australian Standard. **2. Drinking Water Management** The DoH recommends that all drinking water provided on site must meet the health-related requirements of the Australian Drinking Water Guidelines 2011. **3. Medical Entomology** The subject land is in a region that experiences occasional problems with disease carrying mosquitoes. These mosquitoes can disperse several kilometres from breeding sites and are known carriers of Ross River (RRV) and Barmah Forest viruses. 28 human cases of RRV disease have been recorded in the Shire of Chittering in the past 10 years.	**1. Wastewater Management** Noted. **2. Drinking Water Management** Noted. **3. Medical Entomology** Noted.	Noted.

<table>
<tr>
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<td>The DoH recommends that the proponent ensures proposed infrastructure and site works do not create additional mosquito breeding habitat as follows:
1. Changes to topography resulting from earthworks must prevent run-off from creating surface ponding as it may become mosquito breeding habitat.

2. Water tanks and other water-holding containers must be sealed or screened to prevent mosquito access and breeding. Regular monitoring for mosquito larvae and treatment with larvicide may also be required.

3. Constructed water bodies (drainage infrastructure, infiltration basins and swales, settling ponds, etc.) must be located, designed and maintained so they do not create or contribute to mosquito breeding. These may require regular monitoring and application of herbicides and/or removal of invasive vegetation to prevent the harbourage of mosquito larvae.

4. The Chironomid midge and mosquito risk assessment guide for constructed water bodies (Midge Research Group, 2011) should be referred to during the early stages of planning to ensure that the potential for on-site mosquito breeding is minimised. This document is available at: Chironomid-midge.pdf (health.wa.gov.au).

Should you have any queries or require further information, please contact Yashvee Manrakhan-Field, System Performance Scientific Officer, on 9222 2000 or eh.eSubmissions@health.wa.gov.au.</td>
<td></td>
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<tr>
<td>Department of Fire and Emergency Service</td>
<td>Assessment
• DFES acknowledges that a residential dwelling currently exists on the subject site and the development application seeks the addition of four chalets and one administration building.
• The BMP has addressed acceptable solutions A5.4-A5.7 which are for a single holiday home outside a residential area. Multiple holiday homes on a single lot would be considered ‘other short-term accommodation’ and acceptable solutions A5.7-A5.9 should be addressed.
• The Shire has considered this to be a tourism activity and required planning approval. The change to a vulnerable land use would constitute an intensification of development and trigger application of SPP 3.7.
• The intent of SPP 3.7 is to reduce and mitigate the risk of bushfire to people and property which is prescribed through demonstrating compliance to the policy objectives of SPP 3.7. DFES maintains the view that a broader landscape assessment should be considered in the context of a vulnerable land use.
• 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) Preparation of a BAL Assessment
<table>
<tr><td>Administration Errors</td><td>DFES notes that a vegetation classification map has been provided, however the</td><td>Modification to the BMP is required.</td></tr>
</table>
</td>
<td>Comments provided in response to DFES can be viewed in Appendix 1.</td>
<td>Shire officers are confident that the amended Bushfire Management Plan accurately addresses all of the concerns listed by DFES.</td>
</tr>
</table>

	directional markers to indicate the location of the vegetation do not seem to align with the images provided. Specifically, directional marker 9 indicates that the image was taken in the direction of Area 2, however has been used to substantiate the exclusion of Area 3. Similar with directional markers 10 and 11.	
Landscape Management Plan	The BMP has identified that a significant amount of Class A Forest will need to be modified to achieve an APZ compliant with Schedule 1: Standards for Asset Protection Zones contained in the Guidelines. A Landscape Management Plan should be prepared to remove ambiguity for the landowner and to provide a compliance mechanism for the Shire.	Modification to the BMP is required.

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

Element	Assessment	Action
Vulnerable Tourism Land Uses – Intent	**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 vulnerable land use at this location does not comply with the intent of Element 5 of the Guidelines.	Does not comply.
Vulnerable Tourism Land Uses – Siting and Design	**A5.7 – not addressed or demonstrated** Acceptable solution 5.7 should be addressed. The BAL ratings cannot be validated for the reason(s) outlined in the above table. The BMP states that environmental issues including the large number of habitat trees was 'considered and applied' in	Modification to the BMP is required.

	the siting and design of the proposed buildings. However, all the proposed buildings and associated APZ are located within the cluster of habitat trees. A number of trees would be impacted by the implementation of an appropriately sized and well managed APZ. There are other areas within the site which do not have identified habitat trees. The decision maker should be satisfied that the APZ can be established in the proposed area.	
Vulnerable Tourism Land Uses – Vehicular Access	**A5.8e – not addressed or demonstrated** Acceptable solution 5.8 should be addressed. It is unclear from the information provided, that a compliant turning bay is located within 30 metres of each habitable building**.**	Modification to the BMP is required.
Vulnerable Tourism Land Uses - Water	**A5.9 – not addressed or demonstrated** It has not been demonstrated that the proposed water tanks dedicated for fire-fighting purposes and adjacent hard-standing can achieve BAL-29 or below and is accessible to a type 3.4 appliance. Additionally, it is unclear from the information and evidence provided if two 60,000 litre tanks are proposed or if four tanks will be provided as per the site plan and figures 1.2, 3.1, 3.1.1 and 3.1.2.	Modification to the BMP is required.

3. Policy Measure 6.6.1 Vulnerable 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	Comment only.

	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.		
Refuge Building or Refuge Open Space Area	The BEEP recommends onsite shelter for highly vulnerable persons as the primary action in the event of a bushfire emergency. Early evacuation should be the primary action for all persons onsite unless advised otherwise by the controlling agency at the time. Sheltering onsite should be a last resort option and the BEEP should be updated to reflect this. The nominated onsite shelter building should only be considered when evacuation is no longer possible. Please note that if a building is nominated as a bushfire shelter building it should be designed to withstand bushfire attack in the form of wind, smoke, embers, radiant heat and flame contact. A refuge building needs to have a sufficient separation distance from the predominant bushfire prone vegetation to avoid exposure to a radiant heat flux exceeding 10kW/m². A building designated as a bushfire shelter must comply with ABCB Design and Construction of Community Bushfire Refuges (2014). Sheltering in a compliant refuge must be accepted as being a last resort option when it is no longer safe to evacuate to an area not prone to bushfire risk. It should be emphasised that a refuge is not a standalone solution to mitigating risk to life safety.	Comment only.	

Recommendation – not compliant with intent

The development application is not compliant as it does not meet the intent of Element 5: Vulnerable Tourism Land Uses. The proposal is intensifying

	land use in a bushfire prone area with an extreme bushfire hazard both within and surrounding the lot. Notwithstanding the above, if the decision maker is incline to approve the proposal, it is critical that 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 above assessment of compliance with SPP 3.7 is provided to assist decision making. If you require further information, please contact Land Use Planning Officer – Kelsie Petrelis on telephone number 9395 9961.		
Department of Biodiversity, Conservations and Attractions	In reference to your correspondence dated 22 January 2024, the Parks and Wildlife Service of the Department of Biodiversity, Conservation and Attraction (DBCA) provides the following comments. **Native Vegetation Clearing** Any proposed clearing of native vegetation associated with the development should be undertaken in accordance with the Environmental Protection Act 1986 (EP Act) and Environmental Protection (Clearing of Native Vegetation) Regulations 2004 and should be discussed with the Department of Water and Environment Regulation. Thank you for the opportunity to provide comments. Should you have any queries, please contact Lyndon Mutter on 9442 0342.	Noted.	Noted.
Chittering Landcare	The Chittering Landcare Group have looked at this development in 2024 and had given advice to the landholders prior to the submission of their plans. We were waiting to see the Bushfire Management Plan before further comment. We consider that the landholder has done the best they can with the advice given them. The Bushfire Plan does indicate the usual practices required to protect the infrastructure. However, the larger trees which are cockatoo forage trees do not need to be removed but understorey must be controlled and the trees maintained eg. No dead branches. Chittering Landcare has no issues with the development and should any advice be required on this matter of vegetation and fire safety, Chittering Landcare can be contacted for advice. Any further information required please contact Sue Pedrick susan.pedrick@chitteringlandcare.org.au or Rosanna, rosanna.hindmarsh@chitteringlandcare.org.au. Thank you for referring this application to us for comment.	Noted.	Noted. No habitat trees are proposed to be removed as part of this application.
PUBLIC SUBMISSIONS			

Submitter	Comment	Proponent Response	Shire Officer Response
Barbara Schenk – 2180 Chittering Road, Lower Chittering - OBJECTION	Please refer to attached submission letter for submitter's comments.	We have provided a summarised response to address the matters raised within the Submission that are considered relevant planning matters associated with the Development Application stage. <u>Local Planning Strategy and Local Biodiversity Strategy 2022</u> • As detailed within the Development Application the proposed land use is assessable under the zone being 'Agricultural Resource'. The objectives of the zone are to preserve productive land suitable for grazing, encourage intensive agriculture and support associated tourist facilities where appropriate. Given the vegetation on site, the property is not suitable for agriculture and therefore to support the growing tourist region of Chittering and surrounds the establishment of a small number of short-stay accommodation chalets is considered an appropriate and complimentary land use. The Chalets have been clustered to reduce the potential environmental impact and an Environmental Assessment was undertaken. • The proponent contacted Chittering Landcare on the advice of the Shire in 2023 as part of their early planning for the proposed development. Discussions were had around the proposed development (which at the time was for 10 Chalets) and a site visit was undertaken on 23 July 2023. The discussion with representatives of Chittering Landcare identified that clearing would be required around the proposed Chalets and that the consideration to reduce the number of chalets, relocate chalets to the base of the ridge to reduce the APZ and BAL rating and that engagement of an Environmental Consultant be undertaken to assess the vegetation on site. The landowners took on board all the recommendations provided by Chittering Landcare, which are reflected in the amended Site Plan and consultant input. • The landowners engaged *Del Botanics* to undertake a Flora & Vegetation Survey and Black Cockatoo Habitat Assessment in October 2023, which identified several habitat trees that required protection and preservation. The Application was amended to reduce the number of Chalets and ensure that placement of these Chalets avoided site specific trees and clustered to minimise any impact to vegetation associated with the APZ requirements. The landowners live on the property and are passionate about environmental protection and preservation and will continue to maintain this as a priority as part of this development and ongoing management of the site, which has been reflected in the alterations made to reduce the impact to environment as part of this proposal.	Chittering Landcare were advertised to after realising that they were missed in error during the first round of advertising. They did not object to the application once advertised to. This submission references that a 'farmstay' is listed as an 'X' use in the Rural Conservation zone, however lot 28 is zoned as Agricultural Resource and therefore this is not relevant. The proposal is compliant with clause 5.2 of the Shire of Chittering Local Planning Scheme No. 6 as the proposal is not being constructed on a ridgeline and the structures will not be visible from any public road and/or any nearby dwelling. A wildlife assessment undertaken for lot 29 is not relevant for lot 28. The applicant obtained their own flora and fauna survey which did not identify any threatened species on the subject site. No habitat trees are being removed as part of this development. The applicant has agreed to install the remainder of the fencing along the south-east boundary and will also install signage to advise that no guests are to enter at lot 29 at any time. The applicant has stated that no domestic pets will be permitted on the property at any time. The applicant has updated the Bushfire Management Plan to be now demonstrate compliance with State Planning Policy 3.7 (SPP3.7). The applicant has been made aware of their requirement to contact the Department of Water and Environmental Regulation (DWER) to determine if they will require a clearing permit. The structures are proposed to be built to a BAL-29 standard, this will be confirmed during the building permit stage and is not considered a planning matter.

		<u>Shire of Chittering Local Planning Scheme No.4 (Clause 5.2)</u> • The proposed development is located at the base of the ridgeline and will not be visible from Chittering Road, adjoining neighbours' dwellings or property boundaries, due to the proposed setbacks (approximately 200m from Chittering Road and 100m from nearest property boundary) and existing vegetation on site. Furthermore, the proposed structures will be constructed of complimentary materials and colours to match the surrounding environment. • Photograph 10 of the BMP was taken from the proposed Passing Bay location not from Chittering Road. The proposed development will not be visible from Chittering Road. <u>Property Assessment</u> • The comparison of two landholdings and their environmental qualities/ assumed similarities is not relevant to the assessment of this Application. • The landowners have undertaken an Environmental Assessment of their property as part of this Application, which is included as part of the documentation. • Access to the property will be supervised, with the landowners living on site and acting as caretakers to the proposed development. Walking and vehicle tracks will align with existing tracks and will provide the ability for access and exploration by visitors along controlled existing alignments. • Domestic animals are not proposed to be permitted as part of this development and is not considered a relevant planning consideration. • The property will be suitably fenced as required and is not considered a relevant planning consideration. <u>Bushfire Management and Clearing</u> • The establishment of the Asset Protection Zone (APZ) will be required in accordance with the BMP and relevant guidelines. • The proposed development area has been reduced (including a reduction in chalet numbers) and clustered to minimise the potential impact of the APZ. • BAL-29 can be achieved for the proposed Chalets as identified within the BMP. Compliance with requirements of the Building	

		Code is not considered a relevant planning consideration and will be suitably addressed as part of future Building Permit applications.	
Sarah de Beaux – 859 Chittering Valley Road, Lower Chittering – SUPPORT PENDING FURTHER INFORMATION	Apologies for the delay in response. I've been away in Darwin and only just opened the submission hence why I phoned the shire yesterday afternoon to request an extension. In order to give our full support to our neighbour's submission we require some further information surrounding the concerns we have outlined below; Will the short-term stays be operational during non-fire season only? From a risk perspective, the cabin's location on the map show they are in very close proximity to the native bush land. There is nothing mentioned about clearing a large perimeter around them. Also, we are gathering the cabins will be powered by solar/battery storage systems which have a greater risk of causing fires over mains powered systems and as such should have no fuels within a close proximity. The likelihood of a bush fire being started on the property from patrons that don't have a good understanding of bushfire prevention increase significantly compared to long term stays or rentals where personnel can be educated and have a vested interest in fire prevention. From a severity perspective, the bush land on that property hasn't been burnt since the late 1980s and as such has high fuel loads present. This could result in a high intensity fire should one occur. In summary, we are in support of the proposal within the non-fire season period or if the applicants are intending on operating this all year round, further risk mitigating measures would need to be in place. Kind Regards, Sarah de Beaux (Director Innaminka Farms)	The following is provided in response to the submitters queries: • It is proposed that the development will only operate from 1st April to 31st October to avoid the peak fire season. The landowner has also indicated that should a Catastrophic Fire Rating be issued, guests will be evacuated immediately and compensated accordingly. The landowners are also a part of the Chittering Bushfire Brigade and will continue to prioritise the knowledge around bushfire threats and safety of locals and guests to the property. • The Bushfire Management Plan addresses all asset protection zones and fire maintenance requirements.	The applicant has agreed to a condition limiting the operating of the business to between April 1st – October 31st, and also to shut down the business on any day the Fire Behaviour Index exceeds a rating of 49.

*Note: Comments are as per original submission received by the Shire.

Barbara Schenk
2180 Chittering Road
Lower Chittering

19 August 2024

Shire of Chittering
PO Box 70
BINDOON WA 6502

Dear Isaac

RE: 2178 Chittering Road, Lower Chittering
Proposed Farmstay
PO49/24 A3312

I write in response to your letter dated 17 July 2024, informing me of the application for development approval lodged for four short-stay cabins on the abovementioned property.

Firstly, I am writing to convey my sincere **objection** to the proposed farmstay. On receipt of your letter, I have been under considerable stress with the possibility of my privacy and personal well-being, and when considering the environmental implications the proposal will have, I believe the applicant has not adequately addressed key environmental impacts in their application.

Local Planning Strategy and Local Biodiversity Strategy 2022

My property and the subject property are both zoned 'Agricultural Resource' in the Shire of Chittering Local Planning Scheme No.6. Additionally, they are identified as having significant conservation value, recognised as having **'Indicative high conservation value areas'** (IHCVAs) within the Local Planning Strategy and **'High Conservation Value Asset'** within the Local Biodiversity Strategy 2022 (LBS).

The high conservation value appealed to me and was a big factor in my decision to purchase the property 13 years ago.

The LBS's fundamental goal is to minimise the clearing of native vegetation, with critical importance placed on keeping the natural area in good condition. The Chittering Landcare Group confirms this, going on to emphasise that further ecological assessments are recommended on all IHCVA sites prior to any decisions on future land uses. (p58)

I also contacted the Chittering Landcare Group to discuss the proposed farm stay, given their environmental expertise in the Shire of Chittering and involvement in the LBS. We both were very concerned that they were not consulted as part of this advertising process.

The LBS (p60) recognises:

> *'The greatest threat to biodiversity in the Shire of Chittering is development which fails to consider biodiversity as a legitimate land asset. Loss of biodiversity is primarily due to land clearing. With nearly 70% of the total Shire area already cleared, future development should make use of already cleared areas.*
>
> *The Western Australian State of the Environment Report (2006 & 2007) acknowledged that physical threats to biodiversity are exacerbated by knowledge gaps, the failure to adequately value biodiversity in decision-making and the lack of commitment and capacity to manage threats.*
>
> ***It is difficult to maintain biodiversity within a fragmented landscape such as rural residential subdivisions where design encourages small-scale clearing. Any remaining vegetation is***

inadvertently being degraded over years due to unsustainable land-use and higher exposure to threatening processes. *For example, an area that is mostly covered in native vegetation in good condition, when subdivided into 1-2 hectares blocks could potentially lose at least one third of native vegetation to building envelopes, access tracks, fencing and fire risk reduction activities. In addition, through these cleared areas the introduction of weeds, dieback and other degrading processes is significantly increased and to manage them adequately will require significant investment from land managers (Gardner, 2007)'*

Although farmstay is a 'D' use within the LPS, it is an X use within the Rural Conservation Zone.

I believe the objectives and actions within the LBS and LPS recommend implementing stringent planning controls for IHCVAs similar to the Rural Conservation Zone, recognising the detrimental impact that Farmstays have on these highly sensitive conservation areas.

Shire of Chittering Local Planning Scheme 6,

In addition to the above, the subject property is located within a Special Control Area under LPS6, will Clause 5.2 Landscape Protection Areas applicable.

The purpose of the Landscape Protection areas is:

a) *To secure the areas delineated on the Scheme Map from undue subdivision and development that would detract from the landscape value of the rural environment;*

b) *to conserve and enhance the character of the significant landscape area; and*

c) *to ensure land use and developments are compatible with the landscape values*.

In dealing with planning applications in a Landscape Protection area, Clause 5.2 is clear that support will not be given for:

- buildings on any ridgeline that may be predominantly visible from any public road or that may adversely affect the aspects of neighbouring dwellings, or
- the removal of any natural vegetation from any ridgeline.

BFMP_Figure 3.1

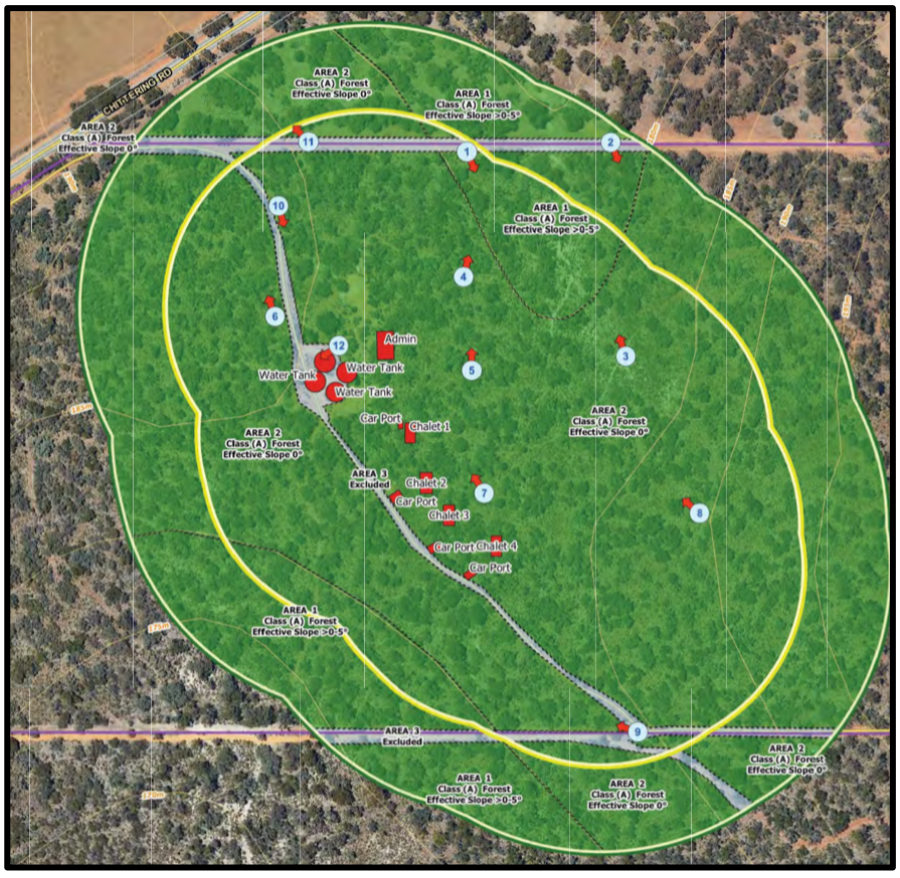


Figure 3.1 extracted from the applicant's BFMP clearly shows the location of the farmstay within a ridgeline on the property. The location and height of the structures, specifically the proposed shelter, will be visible from the line of sight from the Chittering Road end as shown in photograph 10 of the BFMP and from my property boundary as shown in photograph 9 of the BFMP – both shown below.

BFMP_Photograph 10

BFMP_Photograph 9

It is obvious that the proposed structures will be clearly visible from my property and from Chittering Road; therefore, they do not comply with Clause 5.2 of LPS6 and cannot be supported.

Additionally, although Clause 5.2 provides for clearing in association with a building envelope, the extent of clearing proposed is excessive and contrary to the intent of the Landscape Protection Area.

Property Assessment

The subject property and my adjoining property are similar in land area and equal when considering the extensive presence of natural remnant vegetation of open forest, including jarrah, marri, banksia, wandoo, and powder bark.

A Land for Wildlife assessment was undertaken of my property in 1999 (**Attachment 1**) which identified the plant health as 'Excellent with no signs of dieback or fungus. The site was also identified to contain 98% of remnant vegetation and subsequently, 98% was specified as land for wildlife.

Both properties are identified as providing critical links to conservation reserves and provide significant biodiversity bush corridors and wildlife linkages.

I have the pleasure of experiencing an abundance of wildlife daily (plus the occasional unfriendly kind), including:

- Kangaroos, Wallabies, Echidnas, Emu's, Black Monitors, Sand Goannas, Blue Tongue lizards, dugites Tiger Snakes.

- Birds Red-tailed Cockatoos, Carnabies (white tailed cockatoos), Twenty Eights, Red Capped Parrots, Bronze Wing Pigeons, Frog-Mouth, Blue Wren, Red Robins, Silver Eyes, Wagtails and more.

Firstly, I am concerned to hear that approximately 10,000m2 of native vegetation is proposed to be cleared to facilitate the farm stay. I appreciate that the introduction of 4 additional dwellings requires strategic bushfire mitigation measures to protect them, however, the need to clear 10,000m2 of high conservation vegetation itself challenges the conservation intent of the proposed land-use. Which is more appropriately located within sites that are already significantly cleared, but still provide the small-scale experiences of the natural environment.

The application also identifies that walking tracks will be created through the property, with further clearing required, reducing the understory. The introduction of constant vehicle and pedestrian unsupervised access across the subject property and the significant clearing proposed will cause degradation of the remnant vegetation, introduce weeds and frighten wildlife, something that is recognised in the LBS and raises concern, supporting the need to implement stringent planning controls in IHCVAs.

The additional threat by likely domestic animals brought to the site also worries me.

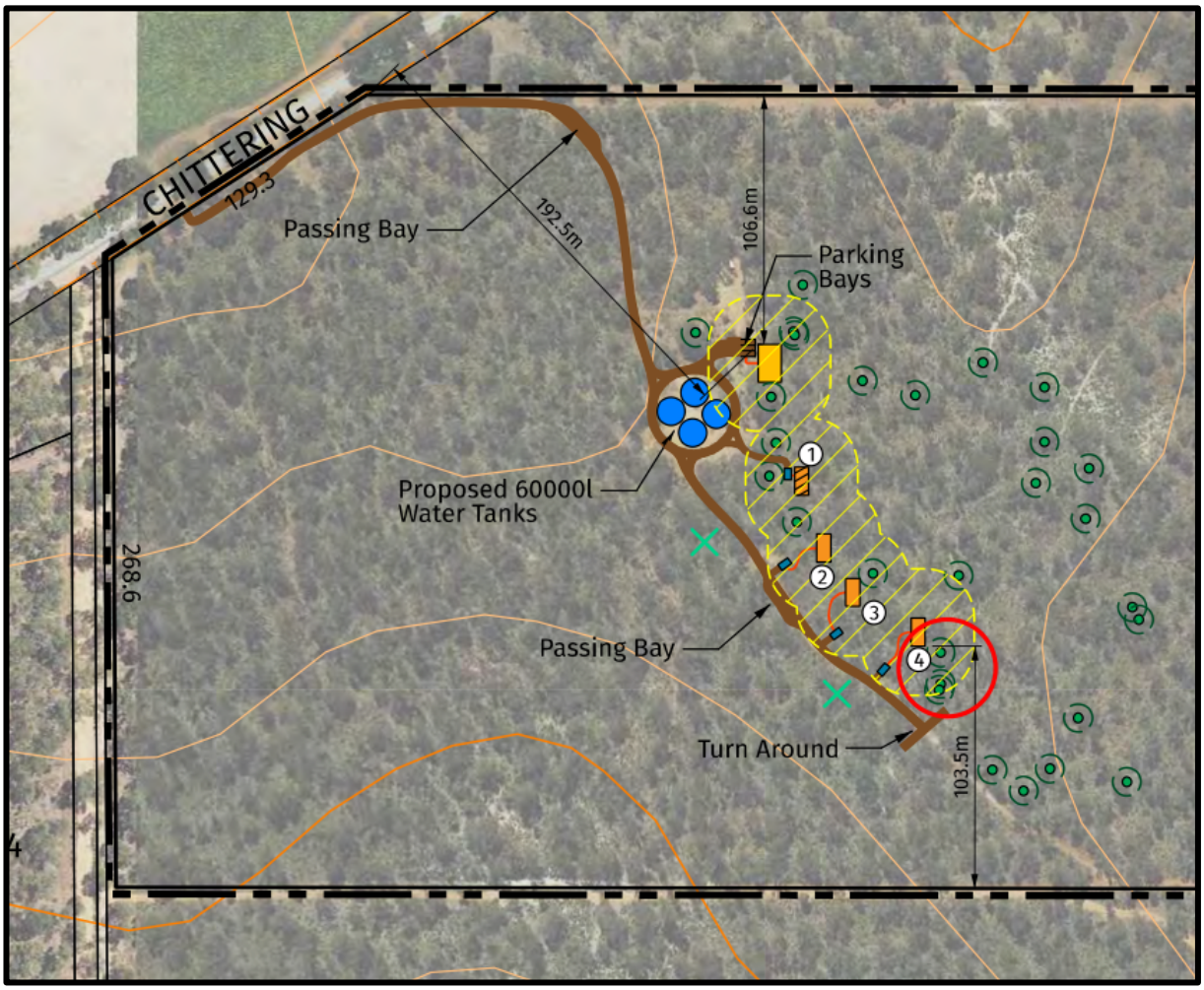
Additionally, encouraging unsupervised access through the property will adversely impact the privacy of my property with a significant portion of the vehicle/pedestrian access track located on my boundary.

The fences on our common boundary are minimal and provide no barrier or security, which is critical to maintaining the recognised wildlife linkages between our properties and nearby conservation reserves.

Bushfire Management and Clearing

After reviewing the BFMP, I raise further concerns about the impacts of the significant clearing proposed and the development's capacity to deliver adequate bushfire safety given the materials utilised in constructing the Cabins.

Firstly, the BFMP identifies the significant roosting or habitat trees that are to be retained within the cleared APZ, however the capacity to retain trees within the APZ is contingent on interlocking canopies not connected to the tree canopy's outside the APZ (p62 BFMP). A snapshot of Page 7 of the BFMP shows an area of canopies to the roosting trees (circled red) that do connect with trees outside the APZ.



As highlighted in the BFMP:

> '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)
>
> 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).

It is unclear as to whether a clearing permit has been applied for and whether a referral under the EPBC act is being undertaken.

The below provides a summary of the referral guidelines under the EPBC Act. Given there is uncertainty that all habitat trees will be retained as well as the known impact that the significant clearing will have on the disturbance of the natural habitats, the introduction of invasive species and increased human visitation, the ability to maintain the current biodiversity is threatened and the proposal is considered a High Risk under the EPBC Act referral guidelines.

Again, I must highlight the following in the LBS (p60):

> ***'It is difficult to maintain biodiversity within a fragmented landscape such as rural residential subdivisions where design encourages small scale clearing. Any remaining vegetation is inadvertently being degraded over years due to unsustainable land-use and higher exposure to threatening processes'.***

Black Cockatoo EPBC Act Referral Guidelines (DSEWPC, 2012)

High risk of significant impacts: referral recommended
• Clearing of any known nesting tree. • **Clearing or degradation of any part of a vegetation community known to contain breeding habitat.** • Clearing of more than 1 ha of quality foraging habitat. • Clearing or degradation (including pruning the top canopy) of a known night roosting site. • Creating a gap of greater than 4 km between patches of black cockatoo habitat (breeding, foraging or roosting).
Uncertainty: referral recommended or contact the department
• Degradation (such as through altered hydrology or fire regimes) of more than 1 ha of foraging habitat. Significance will depend on the level and extent of degradation and the quality of the habitat. • **Clearing or disturbance in areas surrounding black cockatoo breeding, foraging or night roosting habitat that has the potential to degrade habitat through introduction of invasive species, edge effects, hydrological changes, increased human visitation or fire.** • Actions that do not directly affect the listed species but that have the potential for indirect impacts such as increasing competitors for nest hollows. • Actions with the potential to introduce known plant diseases such as Phytophthora spp. to an area where the pathogen was not previously known.
Low risk of significant impacts: referral may not be required
• Actions that do not affect black cockatoo habitat or individuals. • Actions whose impacts occur outside the modelled distribution of the three black cockatoos.

Construction Standards to Comply with AS3959:2018
(Construction of building in bushfire-prone areas) for Bushfire Attack Level (BAL) - 29 (High)

In correspondence from you, it was confirmed that the cabins will be constructed out of '**strawbale'** material.

I question how this material meets the Building standards applicable for buildings within a BAL29, particularly for the proposed vulnerable land use, as identified as such in the BFMP.

The following building standards MUST be adhered to within a BAL29:

> **EXTERNAL WALLS**
> Walls
> The exposed components of an external wall shall be:
> a) Non-combustible material such as cavity brick, masonry veneer walls with an outer leaf of clay, concrete, calcium silicate or natural stone, precast or in situ walls of concrete or aerated concrete or earth walling including mud brick; or
> b) Timber logs of a species with a density of 680 kg/m3 or greater at a 12 percent moisture content; of a minimum nominal overall thickness of 90 mm and a minimum thickness of 70 mm (see Clause 3.11of Standard); and gauge planed; or
> c) Cladding that is fixed externally to a timber-framed or a steel-framed wall and is—
> i. Fibre-cement a minimum of 6 mm in thickness; or
> ii. Bushfire-resisting timber; or
> iii. (Steel sheeting; or
> iv. A combination of any of Items (i), (ii) or (iii) above; or
> d) A combination of any of Items (a), (b) or (c) above.
>
> As such, the identified wall materials do not comply with AS3959:2018 and given I have no information on the other material, there may also be other non-compliant and concerning materials proposed.

Considering the above, it is clear that the proposed farmstay is contrary to many planning and environmental regulations that are in place to prevent such a development as proposed. The proposed farmstay will significantly degrade the pristine natural environment and threaten the native wildlife within the subject property and my adjoining property.

There are also many questions that remain unanswered.

The application should therefore be refused.

A very concerned neighbour.
Barbara Schenk

LAND FOR WILDLIFE

Roseanna Abbonizio & Tony Sprlyan
"Jorema Downs"
Shire of Chittering

Registration: Full

Sign Number: 314
Registration Number: 344

CALM Region: Swan
CALM District: Mundaring

LAND FOR WILDLIFE

PROPERTY ASSESSMENT FORM

1 Property description

Contact Details

Name:	Ms Roseanna Abbonizio & Tony Sprlyan
Main wildlife interests or contacts:	General appreciation of bush and wildlife
Member of Land Conservation District?	Chittering Landcare group
Member of Catchment Group?	N/a
Member of Conservation Group?	N/a
Company/Property Name:	"Jorema Downs"
Address:	Lot 29 Chittering Road Lower Chittering
Ph: (08) 9309 3750	Fax: (08) 9309 3850

Property Details

Shire: Chittering
Location no/s: part of Swan locn 10, Lot 29
Latitude: 31°32'45"
Longitude: 116°6'37"

Total area of property: 34ha
Area of remnant vegetation: 33.2ha
% of whole which contains remveg: 98%
Area of specific LFW site(s): 33.2ha
% of whole which is LFW site(s): 98%

Maps attached

A: ✓ property sketch outlining LFW areas
B: ✓ road map for general location and directions to house
C: ✓ topographical map showing exact boundaries of property
D: ✓ J.S. Beard's vegetation map

Aerial photograph attached

- 5261 Metro Regional Area Run 16 (5177-5264) 07/01/97.

Property management

Date of first clearing:

- Property mainly uncleared except for building envelope and former horse stud.

Main farming enterprise:

- No farming enterprise; residential and function centre.

Other points:

- The area was logged during the 1900's up to around the 1960's. There is evidence of former grazing practices in low areas due to the presence of large areas of regenerating understorey and access tracks.
- The sandy area to the west was used by Haddow Stud for grazing and training horses about 20 years ago, but is now regenerating naturally without much invasion from weeds.

2 General description of property

Describe topography, soil, remnant vegetation, landuse, landcare activities etc over the whole property.

- Topography and soil: the property is steeply sloping with a hilltop at the northeast boundary and slopes to the south and west. Soils are basically lateritic gravels with some exposed laterite on the hilltop and slopes, some areas of red clay on slopes, and a large area of sand on the lower slope to the west. The Atlas of Natural Resources (Department of Conservation and Environment, 1980) describes the landform and soil to be a mixture of the Yalanbee lateritic upland system, characterised by gently undulating landscape dominated by fine gravels, with some duricrust on ridges; and the Bindoon valley slope and scarp system, characterised by steep irregular slopes with shallow red and yellow earths and much rock outcrop, sometimes with a gently sloping apron at the base.
- Remnant vegetation: the vegetation of the property is a mixture of woodland of wandoo and powderbark wandoo on the southern slope and hilltop, jarrah and marri on the western midslope and hilltop, and banksia woodland in the sandy area on the western lower slope. The Atlas of Natural Resources describes the vegetation to be a mixture of the Yalanbee complex, characterised by woodland of wandoo and powderbark wandoo, with open forest of jarrah and marri; and the Murray and Bindoon complex, characterised by open forest of jarrah and marri to woodland of wandoo with flooded gum and blackbutt on the valley floors.
- Landuse: residential and function centre.
- Landcare activities: retention of remnant vegetation, thereby preventing soil erosion and providing habitat for wildlife; education of visitors on bushland.

3 Land for Wildlife habitat description

Brief description of geology and vegetation

Site name	Area (ha)	Geology / Landform / Soil	Vegetation type
Jorema Downs	34.4	Steeply sloping property with red gravels and clay on slopes and sand on lower slopes.	Wandoo and powderbark woodland, jarrah and marri woodland, banksia woodland.

Brief description of flora

Tree layer	Shrub layer	Ground layer
Banksia attenuata – candle banksia *Banksia grandis* – bull banksia *Eucalyptus accedens* – powderbark wandoo *Eucalyptus calophylla* – marri *Eucalyptus marginata* – jarrah *Eucalyptus wandoo* – wandoo *Nuytsia floribunda* – WA Christmas tree	*Acacia pulchella* – prickly Moses *Adenanthos cygnorum* – woollybush *Allocasuarina huegeliana* – rock sheoak *Bossiaea* sp. – brown pea *Calothamnus sanguineus* – silky-leaved blood-flower *Daviesia* sp. – pea *Dryandra sessilis* – parrotbush *Grevillea synaphea* – catkin grevillea *Haemodorum* sp. – bloodroot *Hakea* spp. – hakea *Hibbertia* spp. – buttercups *Macrozamia riedlei* – zamia *Xanthorrhoea preissii* – balga, grasstree	*Anigozanthos manglesii* – kangaroo paw *Anigozanthos* sp. – cats paw *Conostylis* sp. – cottonheads *Drosera* spp. – sundew *Dryandra lindleyana* – honeypots *Isopogon* sp. – coneflower *Kennedia coccinea* – coral vine *Lechenaultia* sp. – leschenaultia *Petrophile linearis* – pixie mops *Stirlingia latifolia* – blueboy *Stylidium* spp. – triggerplant Various native sedges and grasses, orchids

Notes on flora:

- The small prickly shrub with the very long whitish flowers seen on the visit is probably the common pin-heath (*Styphelia tenuiflora*), which is widespread in woodlands, forests and heaths from Gingin to Pinjarra and east.
- With respect to the difference between wandoo and powderbark wandoo: powderbark wandoo appear to have pink powdery bark at this time of year, and are usually situated higher up the slope than wandoo.

Note any rare or threatened flora present or possible (please inform LFW/CALM Wildlife Branch if any of these species are noted):

- No species have been noted for the immediate area surrounding the property (perhaps due to a lack of survey), however four species have been recorded for the general area. These are *Adenanthos cygnorum* subsp. *chamaephyton* (CALM Priority 3), a prostrate form of the woollybush known from a population on Muchea East Road, which may occur on this property near the "horse's graveyard"; *Calytrix sylvana* (CALM Priority 4), a star flower known from the eastern side of the Great Northern Highway; *Grevillea corrugata* (CALM Priority 1), a grevillea known from a population on the junction of Julimar and Chittering Roads; *Thelymitra stellata* (CALM Threatened), a star sun orchid known from a population on Muchea East Road. Notes for identifying some of these species are attached at the end.

Vegetation quality and health

Disturbance?	Plant health?	Expected diversity?	Weeds		Overall quality
			name spp	%	
Some evidence of past grazing and logging practices	Excellent	Yes	Some introduced grasses along disturbed edges and in cleared areas	<5%	Excellent

Notes to elaborate on the table above:

- Plant health: plant health looks to be excellent, with no apparent signs of honey fungus (*Armillaria* sp.), aerial canker fungus (sorry – scientific name not known), or dieback fungus (*Phytophthora cinnamomi*). If dieback is a concern or becomes an issue in future, then strict hygiene must be adhered to. This may include things like diverting water runoff by using spoon drains to direct the flow of water to areas that are already affected or cleared, and preventing excessive human/vehicle travel through unaffected areas of bush. An interesting study was done a few years ago that suggested that dense stands of certain plants actually retarded the spread of dieback. The fungus attacks roots of susceptible species, and actively moves from one plant to another in this fashion. When a stand of non-susceptible plants such as prickly Moses (*Acacia pulchella*) occurs in the path of dieback movement (such a stand could result from a hot fire), the fungus does not actively move through the stand, so in that sense it is inhibited. However water movement through the soil will move the fungus to other areas and result in further spread. Some general information about dieback is attached to this report.

Regeneration

Regenerating naturally?	Ways to improve regeneration
Yes	• No improvement necessary on upper slopes. • Sandy area regenerating naturally, but some plantings or direct seeding using locally native species would help this along. • Notes on the Bradley method of encouraging natural regeneration are attached to the end of this report.

Edge effects

Edge to area ratio – what % of site is greater than 100m from an edge?
• Approximately 20% of the property is greater than 100m from an edge or the boundary, however this area may still be affected to some degree by edge effect by the network of access tracks.

Bush corridor connections

Note existing bush corridors or other wildlife linkages in area
• The attached aerial photograph shows that the adjacent properties to the north, south and east form corridor connections, and that there is also a linkage from this property with a large stretch of bushland linking to Marbling Brook and Brockman River.

Roadside Conservation Committee roadside vegetation assessment:

- Muchea East Road from Great Northern Highway to Chittering Road has been given a low conservation rating for most of its length, meaning that there is little in the way of remnant vegetation suitable as a wildlife corridor. Chittering Road from Chittering Valley Road to Muchea East Road has been given a medium conservation value for most of its length, meaning that it is suitable as a wildlife corridor.

LFW = Land for wildlife

Relationship of LFW sites to conservation reserves

Usual radius for consideration, 1.2km. Maximum radius for consideration, 5km.

Nearby remnants	"C" class reserve ↑41938 vested in NPNCA for the purpose of Conservation of Flora and Fauna, 3210ha	Moondyne Nature Reserve "A" class reserve ↑30191 vested in NNCA for the purpose of Conservation of Flora and Fauna, 1991ha	Avon Valley National Park "A" class reserve ↑30192 vested in NPNCA for the purpose of National Park, 4366ha	Barracca Nature Reserve "A" class reserve ↑4070 vested in NPNCA for the purpose of Conservation of Flora and Fauna, 17ha	Adjacent privately owned remnant, part of locn 10, 36ha, approx 35ha remveg	Adjacent privately owned remnant, part of locn 10 Crave property, 36ha, approx 35ha remveg	Adjacent privately owned remnant, locn 11 "Kytomunga", 197ha, approx 190ha remveg
Straight-line Distance	3km to southeast	7km to east southeast	7.5km to southeast	7.5km to northwest	Adjacent to south	Adjacent to north	Adjacent to east
Linked to LFW site by Crown Land (eg road or rail reserve). 1=good native vegetation, 2=poor or no native vegetation	Linked by road reserve and private property, vegetation rated 1	Adjacent to and linked by ↑41939 and ↑30192, vegetation rated 1	Adjacent to and linked by ↑41938, vegetation rated 1	Linked by road reserve and private property, vegetation rated 1	Adjacent	Adjacent	Adjacent
Linked to LFW site by revegetation	Not known	Not known	Not known	Not known	Adjacent	Adjacent	Adjacent
If directly adjacent to LFW site, what is the total area?	N/a	N/a	N/a	N/a	Approx 70ha remveg	Approx 70ha remveg	Approx 225ha remveg
If adjacent or connected, does the LFW site contain different or similar habitat?	Not assessed	Not assessed	Not assessed	Not assessed	Similar	Similar	Similar

Fauna notes

Fauna	Fauna observed on visit or noted by landholder (include feral animals)
Birds	• white-tailed black cockatoo, Australian ringneck ('28'), grey fantail, • possible birds include: red-tailed black cockatoo, raven, mudlark, common bronzewing, galah, red-capped parrot, red wattlebird, pallid cuckoo, scarlet robin, golden whistler, rufous whistler, New Holland honeyeater, brown honeyeater, white-naped honeyeater, western spinebill, Pacific black duck, wood duck, white-faced heron, wedge-tailed eagle, barn owl, southern boobook, striated pardalote, sacred kingfisher, eagle, hawk or kestrel, stubble quail, wood duck, mountain duck, tawny frogmouth, square-tailed kite, whistling kite, brown goshawk, little eagle, western rosella, fan-tailed cuckoo, Horsfield's bronze-cuckoo, shining bronze-cuckoo, barking owl, Australian owlet-nightjar, spotted nightjar, rainbow bee-eater, rufous tree-creeper, spotted pardalote, splendid wren, white-browed scrubwren, western warbler, western thornbill, yellow-rumped thornbill, singing honeyeater, brown-headed honeyeater, white-cheeked honeyeater, red-capped robin, western yellow robin, hooded robin, varied sitella, crested shrike-tit, grey shrike-thrush, restless flycatcher, silvereye, white-winged triller, masked woodswallow, dusky woodswallow, willie wagtail, magpie, pied butcherbird, grey butcherbird, grey currawong, mistletoebird, welcome swallow, kookaburra – introduced;
Mammal	• grey kangaroo (*Macropus fulignosus*), short-beaked echidna (*Tachyglossus aculeatus*); • possible mammals include: quenda or southern brown bandicoot (*Isoodon obesulus*), common brushtail possum (*Trichosurus vulpecula*), western brush or black-gloved wallaby (*Macropus irma*), yellow-footed antechinus or mardo (*Antechinus flavipes*), rabbit (*Oryctolagus cuniculus*), fox (*Vulpes vulpes*), feral cat (*Felis catus*);
Reptiles	• black-tailed monitor (*Varanus tristus*), bobtail (*Tiliqua rugosa*), common dwarf skink (*Menetia greyii*), thick-tailed barking gecko (*Underwoodisaurus milii*); • possible reptiles include: southern heath monitor (*Varanus rosenbergi*), Gould's monitor (*Varanus gouldii*), western granite worm lizard (*Apraisia pulchella*), Fraser's legless lizard (*Delma fraseri*), western bearded dragon (*Pogona minor*), Burton's legless lizard (*Lialis burtonis*), south-western cool skink (*Bassiana trilineata*), snake-eyed fence skink (*Cryptoblepharus plagiocephalus*), Darling Range heath ctenotus (*Ctenotus delli*), King's skink (*Ergenia kingii*), south-western crevice ergenia (*Ergenia napoleonis*), southern five-toed earless skink (*Hemiergis initialis*), south-western four-toed lerista (*Lerista distinguenda*), southern pale-flecked morethia (*Morethia obscura*), long-necked turtle (*Chelodina oblonga*), Wheatbelt stone gecko (*Diplodactylus granariensis*), speckled stone gecko (*Diplodactylus polyophthalmus*), reticulated velvet gecko (*Oedura reticulata*) – uncommon, southern blind snake (*Ramphotyphlops australis*), fat blind snake (*Ramphotyphlops pinguis*), beaked blind snake (*Ramphotyphlops waittii*), common death adder (*Acanthophis antarcticus*), dugite (*Pseudonaja affinis*), gwarder or western brown snake (*Pseudonaja nuchalis*), Gould's hooded snake (*Rhinoplocephalus gouldii*), black-headed snake (*Rhinoplocephalus nigriceps*), southern half-girdled snake (*Simoselaps semifasciatus*);
Frogs	• possible frogs include: slender tree frog (*Litoria adelaidensis*), western green tree frog (*Litoria moorei*), yellow-flanked burrowing frog (*Heleioporus barycragus*), red-thighed froglet (*Crinia georgiana*), Glauert's froglet (*Crinia glauerti*), green-bellied froglet (*Geocrina leai*), western banjo frog (*Limnodynastes dorsalis*), humming frog (*Neobatrachus pelobatoides*), Gunther's toadlet (*Pseudophrynes guentheri*);
Other	• spiders, insects, marron in dam, ants

Note any rare or threatened fauna present or possible (please inform LFW/CALM Wildlife Branch if any of these species are noted); attach ID notes at end of report:

- *Calyptorhynchus baudinii* – Baudin's cockatoo may be observed in the area during winter; "Vulnerable".
- *Calyptorhynchus latirostris* – Carnaby's cockatoo may be observed in the area; "Endangered".
- *Dasyurus geoffroii* – chuditch or quoll may occur in areas of jarrah forest in Mundaring; "Vulnerable".
- *Falco peregrinus* – peregrine falcon may occur in the area; "Special Protection".
- *Morelia spilota* – southern carpet python is known to occur in the Darling Range along watercourses and to be associated with rocky outcrops; "Special Protection".
- Three species of native bee (*Leioproctus contrarius, Leioproctus douglasiellus, Neopasiphe simplicior*) may occur in the area; "Endangered".

Recommendations for bush corridor connections

Suggest sites on property and on adjacent properties or roadsides
• No sites suggested on property. • On an adjacent property to the east is a working gravel pit and a proposal to allow four wheel drives as a commercial venture on the property. If it looks as though the off-road vehicle venture is to be permitted by the council, it could be suggested to the landholder that a fenced (perhaps through a grant?) corridor of about 20m width should be left along fencelines for use by wildlife, and a fenced remnant should be left on top of the hill and ridgelines, and along creeks.

Could any of these recommendations become the basis for a project by the relevant Catchment Group?

- The creation of wildlife corridors is a suitable project for a catchment group if one existed in the area.

Current management

Fencing?	Grazing?	Timber cutting?	Other?
On the eastern and western boundaries	No	No, removal of some fallen timbers	Weed control, have controlled feral cats by removing litters of kittens

Specific notes of methods (not covered above) to improve fauna habitat:

- Feral animal control: The landholders have been successful in limiting the numbers of feral cats on the property by actively seeking litters of kittens and disposing of them. As a result, adult cats appear not to have increased in number. It might be worth considering a community baiting program for foxes and cats, as neighbouring landholders Fleur Crowe and Ron Witt are also considering.
- Habitat creation: nest boxes may be built out of rough-sawn timber (refer to the relevant Wildlife Note in your folder) and mounted within view of the house, to provide alternative nesting sites or dens for birds, possums and some reptiles.

Fire

Fire history	Fire management
Fire history is not known for certain, however a local resident suggested that a severe fire passed through the district about 20 years ago.	Access tracks occur on the boundary of the property, with a couple of disused possible logging tracks networking across the property.

Is the site adjacent to CALM-managed land? If so, does the landholder want to discuss coordinated fire management operations? Further fire management points discussed:

- Property not adjacent to CALM managed lands, and no further points discussed.
- Fire is sometimes used to stimulate germination and regeneration, although any given area should only be burnt on a cyclical basis no less than seven years apart to ensure that a seed bank has built up in the soil and that diversity of the ecosystem is not compromised. Refer to the chapter on fire in "Managing Your Bushland".

Role of site in Landcare

Value of site to landcare (eg hydrology, erosion control, shelter etc)
• The property is of very high importance to landcare, as outlined briefly below. • Any water runoff from this property eventually flows into the Brockman River, which flows nearby both to the east and west of the property. • The aerial photo shows that a lot of clearing for various agricultural pursuits has occurred in the area, therefore a large area of remnant vegetation is of immense importance as wildlife habitat. • The retention of remnant vegetation on steeply undulating land reduces the risk of erosion, and provides a natural windbreak to nearby cleared areas.

4 Overall summary

Is any part of the property subject to a Conservation Covenant?

- No, this and surrounding properties are zoned rural.
- Most conservation covenants are attached to funding for fencing through the Remnant Vegetation Protection Scheme (RVPS), however a landholder can apply for a covenant to be placed on their property even if funding is not necessary. Write to the Remnant Vegetation Protection Scheme, Agriculture WA, Locked Bag 4, Bentley Delivery Centre WA 6983; or phone Mark Holland on (08) 9368 3906. Landholders need to provide an aerial photograph of the property (clearly showing north) along with location numbers and a clear indication of the area they wish to protect. A conservation covenant needs to be for a minimum of 30 years, and restrictions apply to the landuse activities that may occur in the covenanted area (these are outlined on the RVPS application form, and include things like seed collection, wood gathering, etc). It is the landholder's responsibility to maintain the fences surrounding the covenanted area, although there is no cost to the landholder. It is probable that at some stage in the future, local councils will provide some sort of ongoing rebate for land given over to nature conservation.
- In addition, both the National Trust and CALM are developing covenanting schemes. We will keep you informed of what they entail.

Is the landholder involved in other Landcare or Greening programmes? If so, name them.

- Member of the Chittering Landcare group.

Have any grants been received to assist with this? If so, give name of programme.

- N/a.

If an area on the property is being rehabilitated with nature conservation as one of the aims, describe it, and locate on the map.

- N/a.

Is the landholder prepared to allow an organised Field Day to include this property?

- Yes, with notice.

Is the landholder interested in being on a LFW nature-based tourism contact list?

- Yes.

Are any facilities for tourists and visitors provided?

- Yes, the property has a pagoda function centre and a bunk-house sleeping up to 24 people, available for use with permission from the landholders.

Describe the landholder's overall aims for the property:

- To run a successful but non-invasive business in the bush, and to preserve and protect the natural bush on this property and encourage other landholders to do the same.

Describe the landholder's specific goals with regard to *Land for Wildlife*.

- The scheme is to be a source of acknowledgement and information.

Any other relevant observations?

- The common name "bindi bindi" or "bindii" refers to members of the genus *Sclerolaena*, a native plant occurring throughout the Pilbara and Wheatbelt regions of WA. The plant is a low-growing shrub that produces very prickly seed cases with long spines. The common name "bindii" is also applied to the introduced lawn weed *Soliva pterosperma*, also known as "jo-jo" and "onehunga". I have never heard the common name "bindi bindi" applied to parrot bush. The word "bindi" means to be prickly.
- This property is a wonderful example of three quite different, yet intricately linked, habitats. It is a marvelous setting for a relaxing function, or even a hands-on experience with the WA bush.

Signed: .....

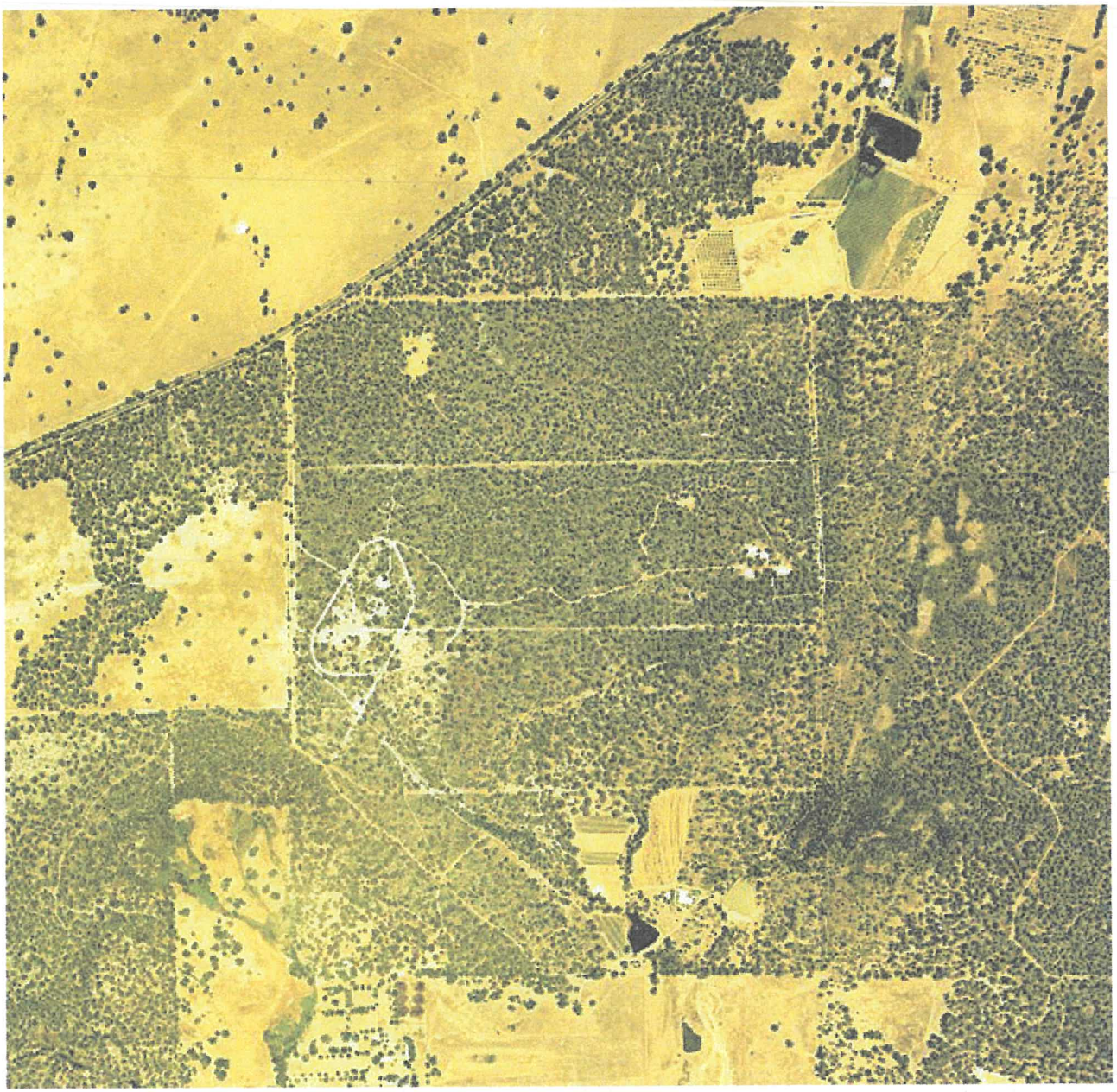
Land for Wildlife Administration Officer

Date: 01/06/99.

LFW Assessment Summary	
Name of assessor:	Emma Bramwell
Date on request for admission to LFW received:	26/01/99
Date on which property surveyed:	29/05/99
Type of registration:	Full
Registration number:	344
Date of issue of sign:	29/05/99
Sign number:	314

Addenda

- Notes on weed and grazing control, sources of tree guards, seeds, etc
- Maps and aerial photograph
- Notes for identifying possible rare flora
- Notes on dieback (*Phytophthora cinnamomi*)
- Notes on the Bradley method of regeneration
- Notes for identifying possible rare fauna



Bushfire management plan/Statement addressing the Bushfire Protection Criteria coversheet

Site address: Lot 28, 2178 Chittering Road, Lower Chittering

Site visit: Yes ☑ No ☐

Date of site visit (if applicable): Day 03 Month August Year 2023

Report author or reviewer: Kathy Nast

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: 277494 Accreditation expiry: Month August Year 2024

Bushfire management plan version number: V2.0

Bushfire management plan date: Day 14 Month November Year 2024

Client/business name: Be Green Earth Pty Ltd

	Yes	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 SPP 3.7 for definitions)?	Yes	No
Unavoidable development (in BAL-40 or BAL-FZ)		✔
Strategic planning proposal (including rezoning applications)		✔
High risk land-use		✔
Vulnerable land-use	✔	

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 information provided within this bushfire management plan to the best of my knowledge is true and correct:

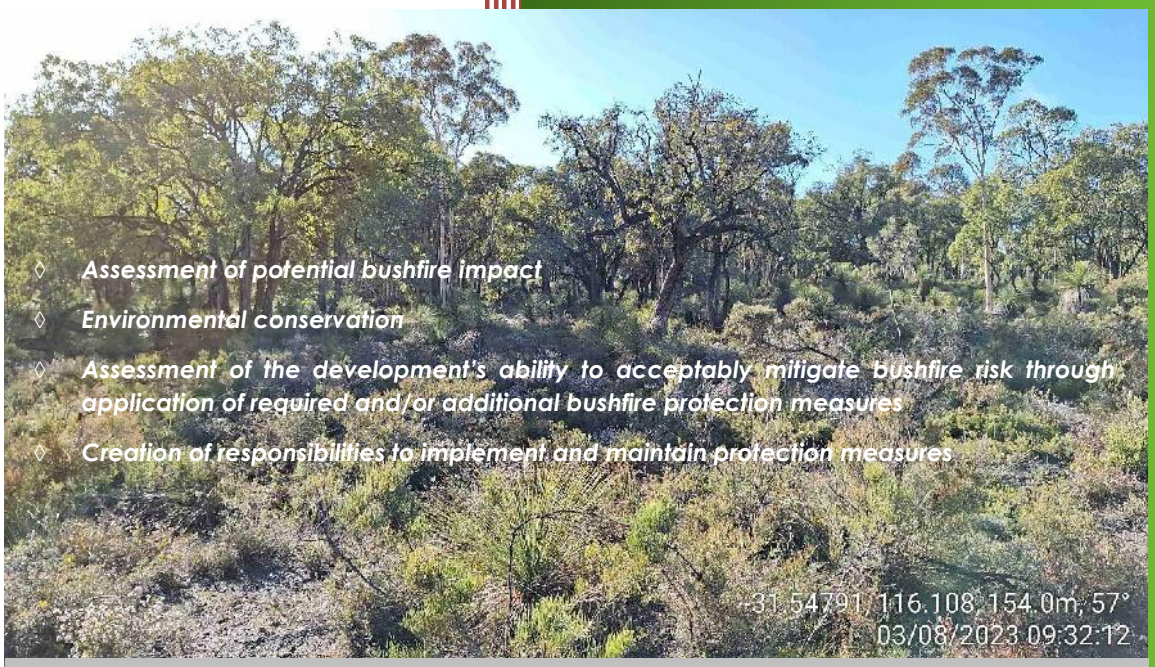
Signature of report author or reviewer 

Date 14/11/2024

BUSHFIRE PRONE PLANNING

Short Stay Accommodation
Chittering

Bushfire Management Plan (BMP)



Produced to meet the relevant requirements of STATE PLANNING POLICY 3.7 Planning in Bushfire Prone Areas & Guidelines

Lot 28
2178 Chittering Road
Lower Chittering

Shire of Chittering

Development Application - Vulnerable Tourism Land Use

14 November 2024

Job Reference No: 230526

BPP GROUP PTY LTD T/A BUSHFIRE PRONE PLANNING

ACN: 39 166 551 784 | ABN: 39 166 551 784

Suite 11 36 Johnson Street
GUILDFORD WA 6055

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DOCUMENT CONTROL

PREPARATION		
Author:	Gearoid Fitzmaurice (BPAD Level 1 No.61156)	
Reviewed:	Kathy Nastov (BPAD Level 3 No. 27794)	

VERSION HISTORY		
Version	Status/Details	Date
DRAFT	Draft For Comment	18 January 2024
1.0	Original	3 May 2024
2.0	Update as per DFES Comments	14 November 2024

DISTRIBUTION					
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Person	Email				
Conrad Mollar	Conrad Moller <moller.conrad@gmail.com>	2.0		☐	☒
Elanri Mollar	Elanri Moller <elanri.moller@gmail.com>	2.0		☐	☒

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.

infringement on the rights of the Company which reserves all legal rights and remedies in respect of any such infringement.

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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 land use planning. 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.

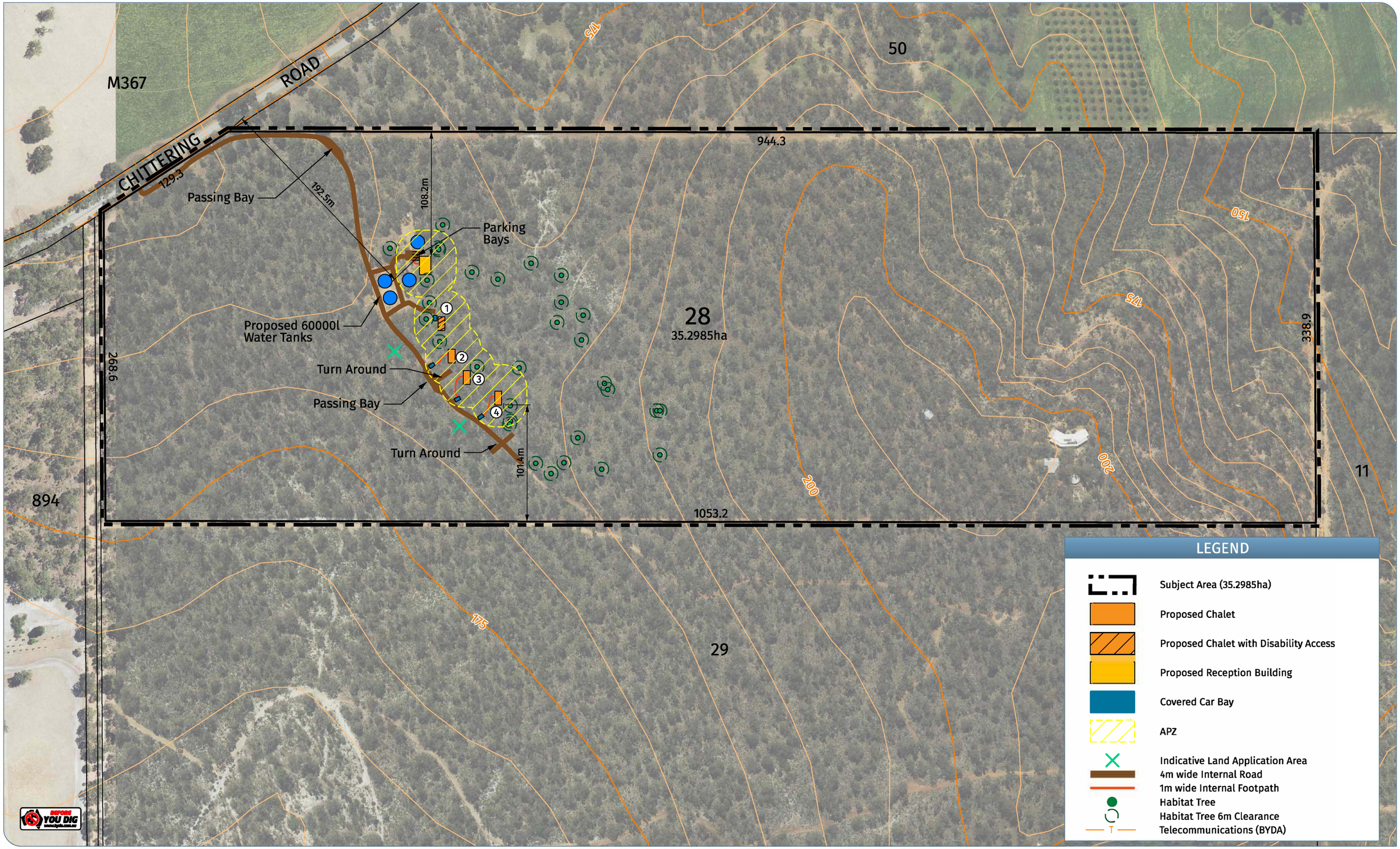
THE PROPOSED DEVELOPMENT/USE – BUSHFIRE PLANNING COMPLIANCE SUMMARY		
Environmental Considerations		**Assessment Outcome**
Will land with identified environmental, biodiversity and conservation values limit the full application of the required bushfire protection measures?		Yes
Will land with identified environmental, biodiversity and conservation values need to be managed in the implementation and maintenance of the bushfire protection measures - but not limit their application?		Yes
Required Bushfire Protection Measures The Acceptable Solutions of the Bushfire Protection Criteria (Guidelines)		**Assessment Outcome**
Element	The Acceptable Solutions	
1: Location	A1.1 Development location	Fully Compliant
2: Siting and Design of Development	A2.1 Asset Protection Zone (APZ)	Fully Compliant
3: Vehicular Access	A3.1 Public roads	Fully Compliant
	A3.2a Multiple access routes	Fully Compliant
	A3.2b Emergency access way	N/A
	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
4: Water	A4.1 Identification of future water supply	N/A
	A4.2 Provision of water for firefighting purposes	Fully Compliant
5: Vulnerable Tourism Land Uses		
Other Short Term Accommodation	A5.7 Siting and Design	Fully Compliant
	A5.7a Siting and design – APZ – caravan park	N/A
	A5.7b Siting and design – APZ – certain accommodation	N/A
	A5.7c Siting and design – APZ – all other accommodation	Fully Compliant
	A5.7d Siting and design – APZ – landscape management	Fully Compliant

	A5.7e Siting and design – onsite shelter – pedestrian paths	N/A
	A5.7f Siting and design – onsite shelter – exposure to hazard	N/A
	A5.7g Siting and design – onsite shelter – construction requirements.	N/A
	A5.8.1 Vehicular Access	Fully Compliant
	A5.8.1a Vehicular access – internal access/private driveway - availability	Fully Compliant
	A5.8.1b Vehicular access – internal access/private driveway – technical requirements	Fully Compliant
	A5.8.1c Vehicular access – signage	Fully Compliant
	A5.8.2a Vehicular access – multiple access routes	Fully Compliant
	A5.8.2b Vehicular access – no-through roads – maximum length	N/A
	A5.8.2c Vehicular access – EAW – alternative access option	N/A
	A5.8.2d Vehicular access – public roads - technical requirements	Fully Compliant
	A5.8.2e Vehicular access – access limitations - onsite shelter option	N/A
	A5.9a Provision of Water	Fully Compliant
	A5.9a Provision of water - reticulated	N/A
	A5.9b Provision of water – non-reticulated	Fully Compliant
Other 'Bushfire Planning' Documents to Be Produced This necessity for additional documents is determined by the proposed development/use type and the requirements established by SPP 3.7 and the associated Guidelines (as amended). 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.		**Required**
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.		Yes
Summary Statement: Due to the development having people who are unfamiliar or vulnerable persons a BEP is required. This will be developed in tandem with this report.		
Bushfire Emergency Information (Poster): As a concise response information poster for certain vulnerable land uses.		Yes
Summary Statement: to be displayed in an area for all guests to review.		
Bushfire Risk Assessment and Management Report:		No

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 planning documents are required to accompany the planning application.		Development Application
The Subject Land/Site		Lot 28, 2178 Chittering Road Lower Chittering
Total Area of Subject Lot/Site		39.2985 hectares
Number of Additional Lots Created		N/A
Primary Proposed Construction	**Type(s)**	New Building(s)
	NCC Classification	Class 1b (house/hostel)
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.		Vulnerable Tourism Land Use
Factors Determining the 'Specific' Land Use Type		The proposed development is a land use that is categorised as a Short term accommodation (other than B&B/Holiday House) including motel, serviced apartments, tourist development (includes cabins and chalets), holiday accommodation and caravan park (which incorporates camping grounds). The proposed tourism land use involves visitors who are unfamiliar with the surroundings and/or where they present evacuation challenges. The proposal would benefit from a Bushfire Emergency Plan to manage the safety of occupants in a bushfire event. Therefore, it should be treated as 'vulnerable'.
Factors Determining the 'Specific' Land Use Type		The proposed land use involves visitors who are unfamiliar with the surroundings and/or presents evacuation challenges. The proposal would benefit from a Bushfire Emergency Plan to manage the safety of occupants in a bushfire event.
Description of the Proposed Development/Use		
Proposed 4 x Short Stay Chalet/Units, car ports, and an Admin Building		



SITE PLAN

Lot 28 (No. 2178) Chittering Road, LOWER CHITTERING

Plan No.	23760-01	
Date	21/11/24	
Drawn	NP	
Checked	AR	
Revision	E	
Scale	1:3000@A3	0 40m 80m

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ALBANY | BUNBURY | BUSSELTON | FORRESTDALE | PERTH

NOTE: This plan has been prepared for planning purposes. Areas, Contours and Dimensions shown are subject to survey

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PLANNING & SURVEY SOLUTIONS 168

Figure 1.2

Proposed Development

Lot 3
2178 Chittering Road
Chittering
Shire of Chittering

CHITTERING RD

CHITTERING RD

Lot 28

Turn Around Point

Turn Around Point

------ LEGEND ------

- Subject Site
- Cadastral
- Roads_(LGATE-012)
- Metropolitan_5m_contours
- Access/ Egress
- Passing Bay

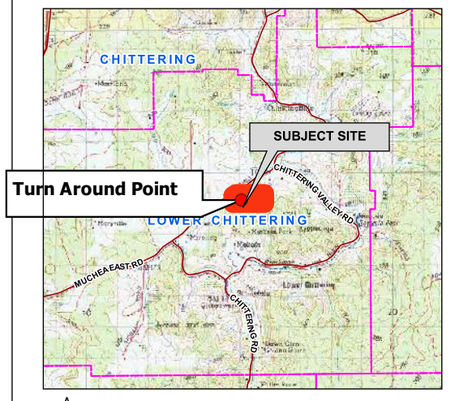
Buildings

- Admin
- Car Port
- Chalet 1
- Chalet 2
- Chalet 3
- Chalet 4
- Firefighting Water
- Water Tank

0 25 50 75 100

Metres

------ LOCALITY ------



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AERIAL IMAGERY: Landgate/SLIP

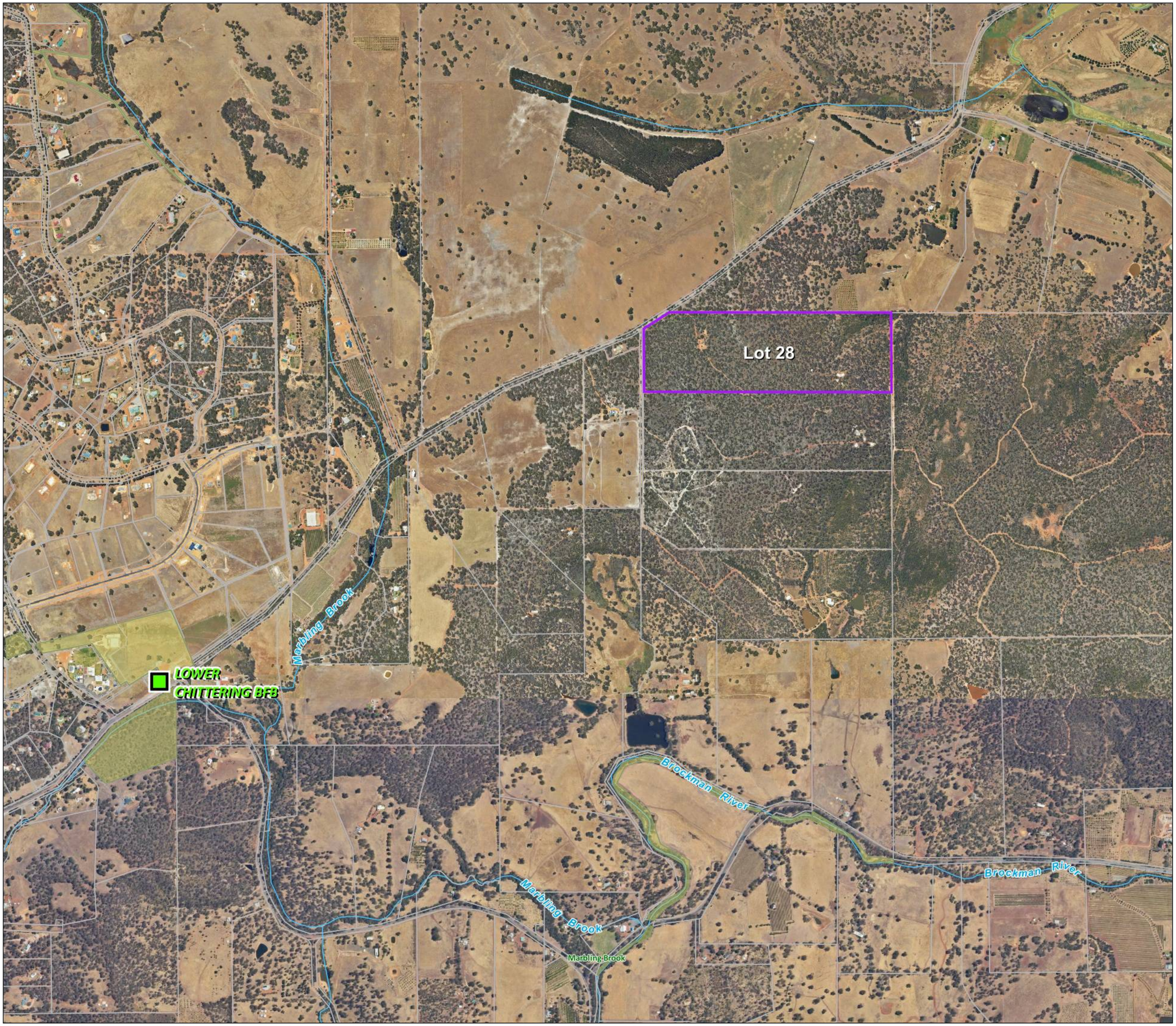
BUSHFIRE PRONE PLANNING

Coordinate System: GDA 1994 MGA Zone 50
Projection: Universal Transverse Merctaor Units: Metre
Map by: 14-11-2024
SCALE (A3): 1 : 2000

Figure 1.3

Location Map

Lot 28
2178 Chittering Road
Chittering
Shire of Chittering



------ LEGEND ------

- Subject Site
- Cadastral
- Roads_(LGATE-012)

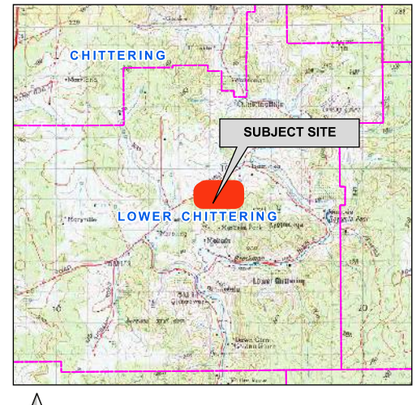
DFES Stations (DFES-023)

- Bush Fire Brigade

0 200 400 600 800

Metres

------ LOCALITY ------



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Coordinate System: GDA 1994 MGA Zone 50
Projection: Universal Transverse Merctaor Units: Metre
Map by: 11-04-2024
SCALE (A3): 1 : 15139

BUSHFIRE PRONE PLANNING

230526 FIG 1.3 LOC 2178 Chittering Road Lower Chittering.qgz

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).

Figure 1.4

Bushfire Prone Area

Lot 28
2178 Chittering Road
Chittering
Shire of Chittering

Lot 28

LOWER CHITTERING BFB

Marbling Brook

Brockman River

Marbling Brook

Marbling Brook

Brockman River

------ LEGEND ------

- Subject Site
- Cadastral
- Roads_(LGATE-012)

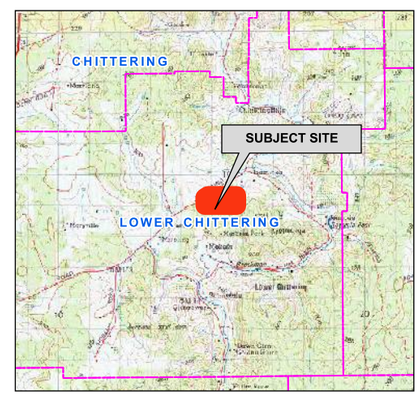
DFES Stations (DFES-023)

- Bush Fire Brigade
- Bush_Fire_Prone_Areas_2021_OBRM-019

0 0.25 0.5 km

Metres

------ LOCALITY ------



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Coordinate System: GDA 1994 MGA Zone 50
Projection: Universal Transverse Merctaor Units: Metre
Map by: 11-04-2024
SCALE (A3): 1 : 15139

BUSHFIRE PRONE PLANNING

1.2 The Bushfire Management Plan (BMP)

1.2.1 Commissioning and Purpose

Landowner / proponent:	Conrad Mollar
Bushfire Prone Planning commissioned to produce the BMP by:	Conrad Mollar
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 Chittering

1.2.2 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	N/A	N/A	-
Bushfire Management Plan	No	N/A	N/A	N/A	-
Bushfire Emergency Plan or Information	Yes	No	Yes	No	-230526 2178 Chittering Road Lower Chittering (BEP) v1.0
Implications for this BMP: A BEP (Supervised Site) will be developed in conjunction with the BMP					
Bushfire Risk Assessment and Management Report	No	No	N/A	N/A	-
Environmental Asset or Vegetation Survey	Yes	No	Yes	N/A	-Flora and Vegetation Survey Chittering 2023
Implications for the BMP: Habitat trees identified. Cannot be removed as part of Asset Protection Zones.					
Landscaping and Revegetation Plan	Yes	No	Yes	No	-TBA
Implications for the BMP: An approved Landscape Management Plan should be provided to demonstrate that the landowner/proponent responsible for the on-going management has an obligation to undertake mitigation works and the approving					

decision maker (i.e. local government and / or Department of Biodiversity, Conservation and Attractions) support the vegetation classification and management treatments assigned to the subject area. Note - Where any Landscaping or Revegetation areas are scheduled to occur as a result of ongoing development within the site, consideration must be given as to not increase the bushfire risk and does not alter the indicative BAL ratings indicated in this plan. It should noted that the asset protection zones and passing bays will have a clearing footprint of approximately 9000m^2.					
Land Management Agreement	No	N/A	N/A	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 site-specific 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 https://www.der.wa.gov.au/our-work/clearing-permits

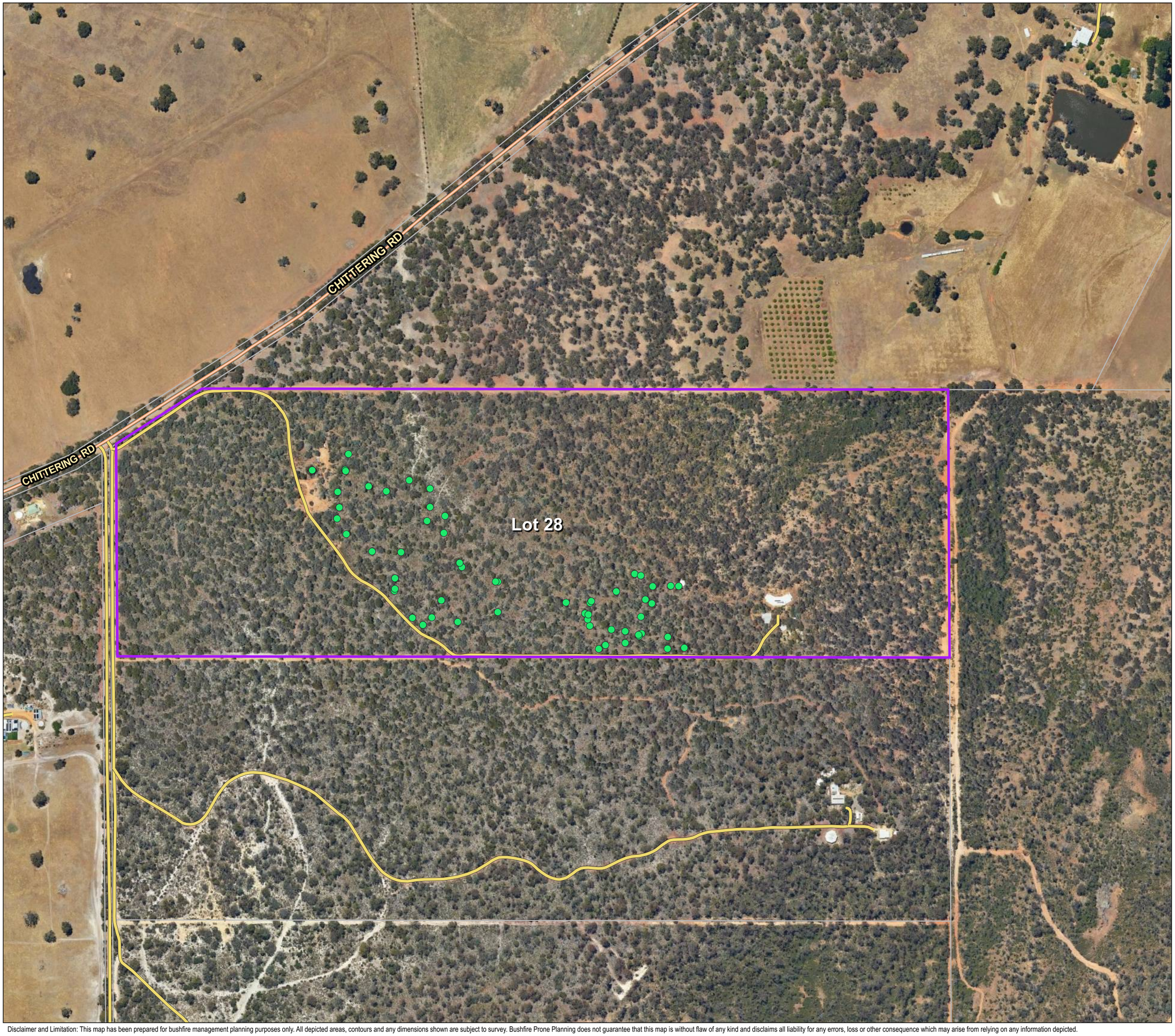


Figure 2.1

Environmental Considerations Map

Lot 28
2178 Chittering Road
Chittering
Shire of Chittering

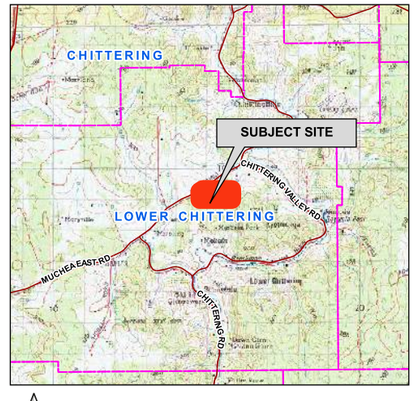
------ LEGEND ------

- Subject Site
- Cadastral
- Roads_(LGATE-012)
- Habitat Trees

0 25 50 75 100

Metres

------ LOCALITY ------



AERIAL IMAGERY: Landgate/SLIP

Coordinate System: GDA 1994 MGA Zone 50
Projection: Universal Transverse Merctaor Units: Metre
Map by: 08-11-2024
SCALE (A3): 1: 4495

BUSHFIRE PRONE PLANNING

2.1.1 Declared Environmentally Sensitive Areas (ESA)

IDENTIFICATION OF RELEVANT ENVIRONMENTALLY SENSITIVE AREAS							
ESA Class	Relevant to Proposal	Influence on Bushfire Threat Levels and / or Application of Bushfire Protection Measures	Relevant Dataset	Information Source(s) Applied to Identification of Relevant Vegetation			Further Action Required
				Dataset	Landowner or Developer	Environmental Asset or Vegetation Survey	
Wetlands and their 50m Buffer (Ramsar, conservation category and nationally important)	No	N/A	DBCA-010 and 011, 019, 040, 043, 044	☒	☐	☐	N/A
Bush Forever	No	N/A	DPLH-022, SPP 2.8	☒	☐	☐	N/A
Threatened and Priority Flora + 50m Continuous Buffer	Possible	Possible	DBCA-036	Restricted Scale of Data Available (security)	☐	☐	Vegetation survey
Threatened Ecological Community	Possible	Possible	DBCA-038		☐	☐	Vegetation survey
Heritage Areas National / World	No	No	Relevant register or mapping	☒	☐	☐	N/A
Environmental Protection (Western Swamp Tortoise) Policy 2002	No	N/A	DWER-062	☒	☐	☐	N/A

DESCRIPTION OF THE IDENTIFIED ENVIRONMENTALLY SENSITIVE AREAS:

A flora and fauna survey has been conducted for the proposed development area. The subject site contains potential habitat trees and foraging vegetation for Black Cockatoos. These are indicated on Figure 2.1. These cannot be removed by the proponent.

2.1.2 Other Protected Vegetation on Public Land

IDENTIFICATION OF PROTECTED VEGETATION ON PUBLIC LAND							
Land with Environmental, Biodiversity, Conservation and Social Values	Relevant to Proposal	Influence on Bushfire Threat Levels and / or Application of Bushfire Protection Measures	Relevant Dataset	Information Source(s) Applied to Identification of Relevant Vegetation			Further Action Required
				Dataset	Landowner or Developer	Environmental Asset or Vegetation Survey	
Legislated Lands (tenure includes national park/reserve, conservation park, crown reserve and state forest)	No	N/A	DBCA-011	☒	☐	☐	None
Conservation Covenants	No	N/A	DPIRD-023	Only Available to Govt.	☐	☐	None
National World Heritage Areas	No	N/A	-	☒	☐	☐	None
Designated Public Open Space	No	N/A	-	☒	☐	☐	None

2.1.3 Locally Significant Conservation Areas – Local Natural Areas (LNA)

IDENTIFICATION OF LOCALLY SIGNIFICANT CONSERVATION AREAS							
Land with Environmental, Biodiversity and Conservation Values	Relevant to Proposal	Influence on Bushfire Threat Levels and / or Application of Bushfire Protection Measures	Relevant Dataset	Information Source(s) Applied to Identification of Relevant Vegetation			Further Action Required
				Dataset	Landowner or Developer	Environmental Asset or Vegetation Survey	
Native Vegetation / Remnant Vegetation	Yes	Possible	SLIP	☒	☐	☐	Confirm with relevant agency
Riparian Zones / Foreshore Areas	No	N/A		☒	☐	☐	None
Habitat Vegetation and Wildlife Corridors	Possible	Possible		☒	☐	☐	Confirm with relevant agency

2.1.4 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' VEGETATION	
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.	Yes
Application of Design and/or Construction Responses to Limit Vegetation Modification or Removal	
Modify the development location to reduce exposure by increasing separation distance.	Considered and applied
Site plans have undergone modification to minimize the amount of clearing for asset protection zone.	
Redesign development, structure plan or subdivision.	Considered and applied
Site plans have undergone modification to minimize the amount of clearing for asset protection zone.	
Reduction of lot yield where this can increase available separation distances.	N/A
Cluster development to limit modification or removal of vegetation.	Considered and applied
Site plans have undergone modification to minimize the amount of clearing for asset protection zone.	
Construct building(s) to the requirements corresponding to higher BAL ratings to reduce required separation distances.	Not required

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:	Yes
Landscape management plan - TBA	

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 re-generation) 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	
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 **onsite** native vegetation to establish the required bushfire protection measures on the subject site?	Yes
Onsite vegetation surrounding the proposed development will need to be managed to create asset protection zones around all new buildings.	
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).	Yes
Always consult with the local government authority prior to the modification of native vegetation.	
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 **offsite** bushfire prone vegetation and/or conduct other works, to establish an identified bushfire protection measure(s)? If 'Yes', appropriate evidence of the approval or how it is to be established, shall be provided in this BMP as an addendum.	No
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? If 'Yes', appropriate evidence of the agreement or how it is to be established, shall be provided in this BMP as an addendum.	No

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 details supporting the change.	
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 Vegetation'	

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/m^2. 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 can 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 cannot 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 determined and indicative 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 determined BAL rating and the BAL Certificate is required for a building permit to be issued - an indicative 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 Determination Methodology		Location of the Site Assessment Data			Location of the Results
AS 3959:2018	Applied to Assessment	Classified Vegetation and Topography Map(s)	Calculation Input Variables		Assessed Bushfire Attack Levels and/or Radiant Heat Levels
			Summary Data	Detailed Data with Explanatory and Supporting Information	
Method 1 (Simplified)	Yes	Figure 3.1	Table 3.2	Appendix A1	Table 3.1 Table 3.3 / BAL Contour Map
Method 2 (Detailed)	No	N/A	N/A	N/A	

3.1.2 BAL Ratings Derived from the Contour Map

Table 3.1: Indicative and determined BAL(s) for future buildings/structures on the proposed lots.

BUSHFIRE ATTACK LEVEL FOR FUTURE BUILDINGS / STRUCTURES ON STATED LOT [1]		
Lot No.28	Future Buildings / Structure	
	Indicative BAL [2]	Determined BAL [2]
Proposed Accommodation 1-4	BAL-29	N/A
Proposed Admin Building	BAL-29	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'. [2] Refer to the start of Section 3 for an explanation of indicative versus determined BAL ratings.		

3.1.3 Site Assessment Data Applied to Construction of the BAL Contour Map(s)

RELEVANT CLASSIFIED VEGETATION	
Identification of Classified Vegetation that is Relevant to the Production of the BAL Contour Map(s)	Relevant Vegetation Map
The relevant vegetation will be all areas of classified vegetation that exist at the time of the site assessment – both within the subject site (onsite) and external to the subject site (offsite).	Figure No.3.1
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
Supporting Assessment Details: None required,	

Table 3.2: The calculation inputs applied to determining the site specific separation distances corresponding to levels of potential radiant heat transfer (including BAL's).

SUMMARY OF CALCULATION INPUT VARIABLES APPLIED TO THE DETERMINATION OF SEPARATION DISTANCES CORRESPONDING TO RADIANT HEAT LEVELS [1]												
Applied BAL Determination Method		METHOD 1 - SIMPLIFIED PROCEDURE (AS 3959:2018 CLAUSE 2.2)										
The Calculation Variables Corresponding to the BAL Determination Method Applied												
Methods 1 and 2		Method 1	Method 2									
Vegetation Classification		FDI	Effective Slope		Site Slope	FFDI or GFDI	Flame Temp.	Elevation of Receiver	Flame Width	Fireline Intensity	Flame Length	Modified View Factor
			Applied Range	Measured								
Area	Class		degree range	degrees	degrees		K	metres	metres	kW/m	metres	% Reduction
1	(A) Forest	80	Downslope >0-5	d/slope 4								
2	(A) Forest	80	Upslope or flat 0	flat 0								
3	Excluded cl 2.2.3.2(e & f)	80	N/A	N/A								

[1] All data and information supporting the determination of the classifications and values stated in this table and any associated justification, 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 radiant heat levels illustrated as BAL contours in Figure 3.2.

THE CALCULATED VEGETATION SEPARATION DISTANCES CORRESPONDING TO THE STATED LEVEL OF RADIANT HEAT [1]									
Vegetation Classification		Separation Distances Corresponding to Stated Level of Radiant Heat (metres)							
		Bushfire Attack Level						Maximum Radiant Heat Flux	
Area	Class	BAL-FZ	BAL-40	BAL-29	BAL-19	BAL12.5	BAL-LOW	10 kW/m^2	2 kW/m^2
1	(A) Forest	<20	20-<27	27-<37	37-<50	50-<100	>100		
2	(A) Forest	<16	16-<21	21-<31	31-<42	42-<100	>100		
3	Excluded cl 2.2.3.2(e & f)	N/A	N/A	N/A	N/A	N/A	N/A		

[1] All calculation input variables are presented in Table 3.2. A copy of radiant heat calculator output for each area of classified vegetation are presented in Appendix A3.

Figure 3.1

Existing Topography & Classified Vegetation

Lot 3
2178 Chittering Road
Chittering
Shire of Chittering

CHITTERING RD

AREA 2
Class (A) Forest
Effective Slope 0°

AREA 1
Class (A) Forest
Effective Slope >0-5°

AREA 2
Class (A) Forest
Effective Slope 0°

AREA 1
Class (A) Forest
Effective Slope >0-5°

AREA 2
Class (A) Forest
Effective Slope 0°

AREA 2
Class (A) Forest
Effective Slope 0°

AREA 3
Excluded

AREA 1
Class (A) Forest
Effective Slope >0-5°

AREA 3
Excluded

AREA 2
Class (A) Forest
Effective Slope 0°

AREA 1
Class (A) Forest
Effective Slope >0-5°

AREA 2
Class (A) Forest
Effective Slope 0°

Water Tank
Admin
Water Tank
Water Tank
Car Port
Chalet 1
Chalet 2
Car Port
Chalet 3
Car Port
Chalet 4
Car Port

1 2 3 4 5 6 7 8 9 10 11 12

175m 180m 185m 190m 195m 200m

------ LEGEND ------

- Subject Site
- Cadastral
- Roads_(LGATE-012)
- Metropolitan_5m_contours

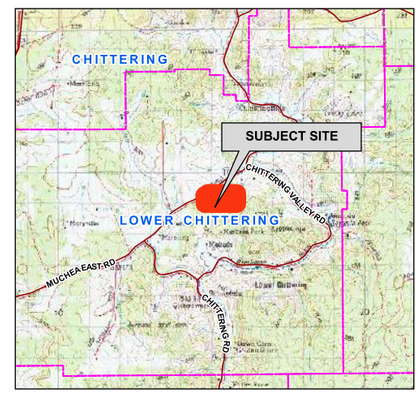
Classified Vegetation Slope Range

- Class A - Forest
- Exclusion 2.2.3.2
- Metropolitan_5m_contours
- Proposed Buildings
- Photo & Direction

0 25 50 75 100

Metres

------ LOCALITY ------



AERIAL IMAGERY: Landgate/SLIP

Coordinate System: GDA 1994 MGA Zone 50
Projection: Universal Transverse Merctaor Units: Metre
Map by: 08-1-2024
SCALE (A3): 1 : 1750

BUSHFIRE PRONE PLANNING

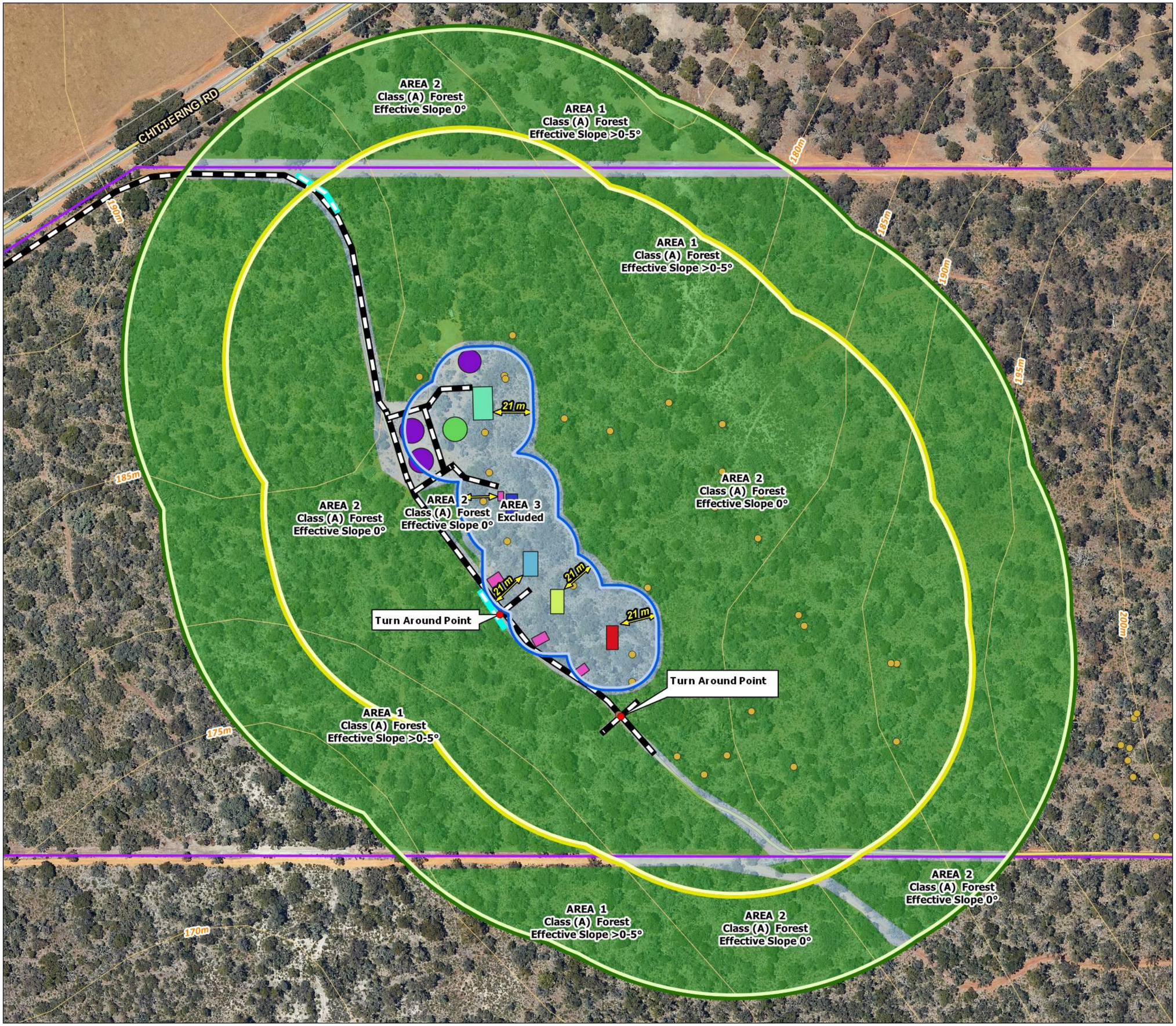


Figure 3.1.1

Post Development Topography & Classified Vegetation

Lot 3
2178 Chittering Road
Chittering
Shire of Chittering

------ LEGEND ------

- Subject Site
- Cadastral
- Roads_(LGATE-012)
- Metropolitan_5m_contours

Classified Vegetation Slope Range

- Class A - Forest
- Exclusion 2.2.3.2
- Metropolitan_5m_contours

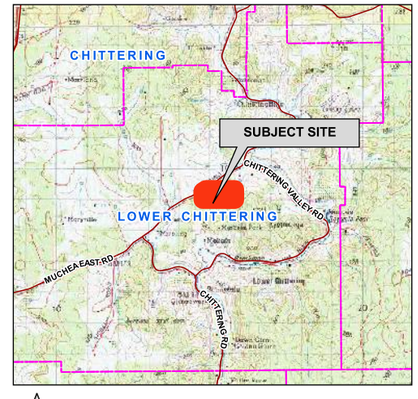
Buildings

- Admin
- Car Port
- Theatre/On site shelter
- Covered Car Port
- Chalet 3
- Chalet 4
- Firefighting Water
- Access/ Egress
- APZ Distance (m)
- APZ
- Passing Bay

0 25 50 75 100

Metres

------ LOCALITY ------



AERIAL IMAGERY: Landgate/SLIP

BUSHFIRE PRONE PLANNING

Coordinate System: GDA 1994 MGA Zone 50
Projection: Universal Transverse Merctaor Units: Metre
Map by: 08-10-2024
SCALE (A3): 1 : 1750

Figure 3.2

BAL Contour Map

Lot 3
2178 Chittering Road
Chittering
Shire of Chittering

CHITTERING RD

AREA 2
AREA 1
AREA 1
AREA 2
AREA 2
AREA 3
AREA 1
AREA 3
AREA 2
AREA 2

21 m
21 m
21 m
21 m
21 m

------ LEGEND ------

- Subject Site
- Passing Bay
- Access/ Egress
- APZ Distance (m)
- 21m APZ

Bushfire Attack Levels

- BAL-FZ
- BAL-40
- BAL-29
- BAL-19
- BAL-12.5
- BAL-LOW

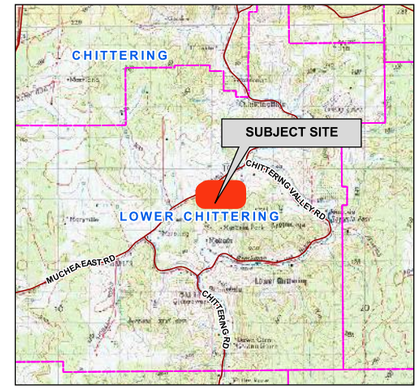
Buildings

- Admin
- Car Port
- Chalet 1
- Chalet 2
- Chalet 3
- Chalet 4
- Firefighting Water
- Water Tank

0 25 50 75 100

Metres

------ LOCALITY ------



AERIAL IMAGERY: Landgate/SLIP

BUSHFIRE PRONE PLANNING

Coordinate System: GDA 1994 MGA Zone 50
Projection: Universal Transverse Merctaor Units: Metre
Map by: 14-11-2024
SCALE (A3): 1 : 1500

230526 FIG 3.2 BALCON 2178 Chittering Road Lower Chittering.qgz

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 ***strategic planning*** 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	Yes

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 against the Bushfire Protection Criteria for the proposed development /use?	None known or identified

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 Development/Use – Relevant Planning Stage	(Do) Development application other than for a single dwelling, ancillary dwelling or minor development
Element Compliance 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

Acceptable Solutions - Assessment 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.

Solution Component Check Box Legend	☑ Relevant & met	☒ Relevant & not met	⃠ Not relevant

A1.1 Development location	**Applicable:** Yes	**Compliant:** Yes

ASSESSMENT AGAINST THE REQUIREMENTS ESTABLISHED BY THE GUIDELINES

☑ ☐ ☐ The development application is located in an area that is or will, on completion, be subject to either a moderate or low bushfire hazard level, or BAL-29 or below.

Supporting Assessment Details:

The proposed development will provide an area of land within each lot that can be considered suitable for development as BAL-40 or BAL-FZ construction requirements will not be required to be applied. This meets the requirements established by Acceptable Solution A1.1 and its associated explanatory note. In addition, the vegetation surrounding the proposed development can be classed as a moderate bushfire hazard level.

ASSESSMENTS APPLYING THE GUIDANCE ESTABLISHED BY THE WAPC ELEMENT 1 & 2 POSITION STATEMENT (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 adjoining and within 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 within the subject site the relevant threat levels to consider are the radiant heat levels represented by BAL-FZ and BAL-40 ratings.

The planning proposal is a development application, consequently the referenced position statement is not applicable to the Element 1 assessment.

5.4 Assessment Statements for Element 2: Siting and Design

SITING AND DESIGN OF DEVELOPMENT	
Element 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 – Relevant Planning Stage	(Do) Development application other than for a single dwelling, ancillary dwelling or minor development
Element Compliance 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

Acceptable Solutions - Assessment 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.

Solution Component Check Box Legend	☑ Relevant & met	☒ Relevant & not met	⃠ Not relevant

A2.1 Asset Protection Zone (APZ)	**Applicable**: Yes	**Compliant**: Yes

APZ DIMENSIONS – DIFFERENCES IN REQUIREMENTS FOR PLANNING ASSESSMENTS COMPARED TO IMPLEMENTATION

A key required bushfire protection measure is to reduce the exposure of buildings/infrastructure (as exposed vulnerable elements at risk), to the direct bushfire threats of flame contact, radiant heat and embers and the indirect threat of consequential fires that result from the subsequent ignition of other combustible materials that may be constructed, stored or accumulate in the area surrounding these structures. This reduces the associated risks of damage or loss.

This is achieved by separating buildings (and consequential fire fuels as necessary) from areas of classified bushfire prone vegetation. This area of separation surrounding buildings is identified as the Asset Protection Zone (APZ) and consists of no vegetation and/or low threat vegetation or vegetation continually managed to a minimal fuel condition. The required separation distances will vary according to the site specific conditions and local government requirements.

The APZ dimensions stated and/or illustrated in this Report can vary dependent on the purpose for which they are 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 BAL-29' APZ DIMENSIONS

Purpose: To provide evidence of the development or use proposal's ability to achieve minimum vegetation separation distances. To achieve 'acceptable solution' planning approval for this factor, it must be demonstrated that the minimum separation distances corresponding to a maximum level of radiant transfer to a building of 29 kW/m^2, either exist or can be implemented (with certain exceptions). These separation distances are 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 sole purpose is to identify if an acceptable solution for planning approval can be met.

THE 'REQUIRED' APZ DIMENSIONS

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:

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'.

> *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).
☐ ☐ ⊘	**Subdivision Staging:** There are undeveloped future stages of subdivision, containing bushfire prone vegetation, that have been taken into consideration for their potentially 'temporary' impact on the ability to establish a 'Planning BAL-29' APZ on adjoining developed lots. A staging plan is developed to manage this.
☑ ☐ ☐	**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:

The ability to establish the 'Planning BAL-29' APZ dimensions is illustrated in Figure 3.1.1. Onsite native vegetation will be required to be modified and/or removed, for which the appropriate authority will be required (refer to Section 2 of this BMP).

ASSESSMENTS APPLYING THE GUIDANCE ESTABLISHED BY THE WAPC ELEMENT 1 & 2 POSITION STATEMENT (2019)

Strategic Planning Proposals: "At this planning level there may not be enough detail to demonstrate compliance with this element. The decision-maker may consider this element is satisfied where A1.1 is met."

Structure Plans (lot layout known) and Subdivision Applications: "Provided that Element 1 is satisfied, the decision-maker may consider approving lot(s) containing BAL-40 or BAL-FZ under the following scenarios.

The planning proposal is a development application, consequently the referenced position statement is not applicable to the proposed development.

5.5 Assessment Statements for Element 3: Vehicular Access

VEHICULAR ACCESS	
Element Intent	To ensure that the vehicular access serving a subdivision/development is available and safe during a bushfire event.
Proposed Development/Use – Relevant Planning Stage	(Do) Development application other than for a single dwelling, ancillary dwelling or minor development
Element Compliance 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

Acceptable Solutions - Assessment 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 2 and 3. 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 Component Check Box Legend	☑ Relevant & met	☒ Relevant & not met	⃠ Not relevant

A3.1 Public roads	**Applicable**: Yes	**Compliant**: Yes

☑ ☐ ☐	The technical construction requirements of vertical clearance and weight capacity (Guidelines, Table 6) can and will be complied with (Refer also to Appendix C in this BMP).
☐ ☐ ⃠	The applicable class(s) of road and technical requirements have been confirmed with the relevant local government/Main Roads WA. These can and will be complied with.
☐ ☐ ⃠	A traversable verge is available adjacent to classified vegetation (Guidelines, E3.1), as recommended.

Supporting Assessment Details: No new public roads will be built as part of this development. Existing public roads are compliant with Main Roads standards.

A3.2a Multiple access routes	**Applicable**: Yes	**Compliant**: Yes

☑ ☐ ☐	For the lot, two-way public road access is provided in two different directions to at least two different suitable destinations with an all-weather surface.
☐ ☐ ⃠	The two-way access is available at an intersection no greater than 200m from the relevant boundary of each lot, via a no-through road.

☐ ☐ ⊘	The two-way access is <u>not</u> available at an intersection within 200m from the relevant boundary of each lot. However, the available no-through road satisfies the established exemption for the length limitation in every case. These requirements are: • Demonstration of no alternative access (refer to A3.3 below); • The no-through road travels towards a suitable destination; and • The balance of the no-through road that is greater than 200m from the relevant lot boundary is within a residential built-out area or is potentially subject to radiant heat levels from adjacent bushfire prone vegetation that correspond to the BAL-LOW rating (<12.5 kW/m^2).
Supporting Assessment Details: 'Chittering' Road provides access and egress in two different directions to two different locations and is accessed from the subject lot via private driveway'	

A3.2b Emergency access way	**Applicable**: No	**Compliant**: N/A

☐ ☐ ⊘	The proposed or existing EAW provides a through connection to a public road.
☐ ☐ ⊘	The proposed or existing EAW is less than 500m in length and will be signposted and gated (remaining unlocked) to the specifications stated in the Guidelines and/or required by the relevant local government.
☐ ☐ ⊘	The technical construction requirements for widths, clearances, capacity, gradients and curves (Guidelines, Table 6 and E3.2b. Refer also to Appendix C in this BMP), can and will be complied with.
Supporting Assessment Details: None required.	

A3.3 Through-roads	**Applicable**: No	**Compliant**: N/A

☐ ☐ ⊘	A no-through public road is necessary as no alternative road layout exists 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 and E3.1. Refer also to Appendix C in this BMP), can and will be complied with as established in A3.1 above.
☐ ☐ ⊘	The turnaround area requirements (Guidelines, Figure 24) can and will be complied with.
Supporting Assessment Details: None required.	

A3.4a Perimeter roads	**Applicable**: No	**Compliant**: N/A

☐ ☐ ⊘	The proposed greenfield or infill development consists of 10 or more lots (including those that are part of a staged subdivision) and therefore should have a perimeter road. This is planned to be installed.
☐ ☐ ⊘	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, capacity, gradients and curves (Guidelines, Table 6 and E3.4a) can and will be complied with.

Supporting Assessment Details: None required.

A3.4b Fire service access route	**Applicable**:	No	**Compliant**:	N/A

☐ ☐ ⊘ The FSAR can be installed as a through-route with no dead ends, linked to the internal road system every 500m and is no further than 500m from a public road.

☐ ☐ ⊘ 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 required by the relevant local government, the specifications can be complied with.

☐ ☐ ⊘ Turnaround areas (to accommodate type 3.4 fire appliances) can and will be installed every 500m on the FSAR.

Supporting Assessment Details: None required.

A3.5 Battle-axe access legs	**Applicable**:	No	**Compliant**:	N/A

☐ ☐ ⊘ A battle-axe leg cannot be avoided due to site constraints.

☐ ☐ ⊘ The proposed development is in a reticulated area and the battle-axe access leg length from a public road is no greater than 50m. No technical requirements need to be met.

☐ ☐ ⊘ The proposed development is not in a reticulated area. The technical construction requirements for widths, clearances, capacity, gradients and curves (Guidelines, Table 6 and E3.5. Refer also to Appendix C in this BMP), can and will be complied with.

☐ ☐ ⊘ Passing bays can and will be installed every 200m with a minimum length of 20m and a minimum additional trafficable width of 2m.

Supporting Assessment Details: None required.

A3.6 Private driveways	**Applicable**:	Yes	**Compliant**:	Yes

☐ ☐ ⊘ The private driveway to the most distant external part of the development site is within a lot serviced by reticulated water, is accessed via a public road with a speed limit of 70 km/hr or less and has a length is no greater than 70m (measured as a hose lay). No technical requirements need to be met.

☑ ☐ ☐ The technical construction requirements for widths, clearances, capacity, gradients and curves (Guidelines, Table 6 and E3.6. Refer also to Appendix C in this BMP), can and will be complied with.

☑ ☐ ☐	Passing bays can and will be installed every 200m with a minimum length of 20m and a minimum additional trafficable width of 2m.
☑ ☐ ☐	The turnaround area requirements (Guidelines, Figure 28, and within 30m of the habitable building) can and will be complied with.
Supporting Assessment Details: Passing bays will be installed every 200m as shown in Figure 1.1 and Figure 3.1.1.	

5.6 Assessment Statements for Element 4: Water

FIREFIGHTING WATER	
Element Intent	To ensure water is available to enable people, property and infrastructure to be defended from bushfire.
Proposed Development/Use – Relevant Planning Stage	(Do) Development application other than for a single dwelling, ancillary dwelling or minor development
Element Compliance 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

Acceptable Solutions - Assessment 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 2 and 3. 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 Component Check Box Legend ☑ Relevant & met ☒ Relevant & not met ⃠ Not relevant

A4.1 Identification of future firefighting water supply	**Applicable**: No	**Compliant**: N/A

☐ ☐ ⃠ It can be demonstrated that reticulated or sufficient non-reticulated water for firefighting can be provided at the subdivision and/or development application stage in accordance with the specifications of the relevant water supply authority or the requirements of Schedule 2.

Supporting Assessment Details: None required.

A4.2 Provision of water for firefighting purposes	**Applicable**: Yes	**Compliant**: Yes

☐ ☐ ⃠ A reticulated water supply is available to the proposed development. The existing hydrant connection(s) are provided in accordance with the specifications of the relevant water supply authority.

☐ ☐ ⃠ A reticulated water supply will be available to the proposed development. Hydrant connection(s) can and will be provided in accordance with the specifications of the relevant water supply authority.

☑ ☐ ☐ A static water supply (tank) for firefighting purposes will be installed on the lot that is additional to any water supply that is required for drinking and other domestic purposes.

☐ ☐ ⃠ A strategic water supply (tank or tanks) for firefighting purposes will be installed within or adjacent to the proposed development that is additional to any water supply that is required for drinking and other domestic purposes. The required land will be ceded free of cost to the local government and the lot or road reserve where the tank is to be located will be identified on the plan of subdivision.

☐ ☐ ⊘	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: Two 60,000L water tanks will be designated exclusively for firefighting. Refer to information contained in Appendix D for the firefighting water supply specifications and technical requirements.	

5.7 Assessment Statements for Element 5: Vulnerable Tourism Land Uses

5.7.1 Other Short Term Accommodation

VULNERABLE TOURISM	
Element Intent	To provide bushfire protection for tourism land uses relevant to the characteristics of the occupants and/or the location, to preserve life and reduce the impact of bushfire on property and infrastructure.
Proposed Development/Use – Relevant Type	**Short term accommodation (other than B&B/Holiday House) including motel, serviced apartments, tourist development (includes cabins and chalets), holiday accommodation and caravan park (which incorporates camping grounds).**
Element Compliance 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

Acceptable Solutions - Assessment 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 '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 Component Check Box Legend ☑ Relevant & met ☒ Relevant & not met ⃠ Not relevant

A5.7 Siting and Design - Assessment Against the Acceptable Solutions

A5.7 Siting and Design			**Compliant:**	Yes
A5.7a Asset protection zone (APZ) – caravan park only	**Applicable:**	No	**Compliant:**	No

☐ ☐ ⃠ The existing and/or proposed campground facilities (i.e. office, manages residence, camper's kitchen, showers, laundry etc.) can be sited within an asset protection zone of the required dimensions that will ensure their exposure to the potential radiant heat impact of a bushfire does not exceed 29 kW/m2 (BAL-29).

Supporting Assessment Details: None required.

A5.7b Asset protection zone (APZ) – certain accommodation	**Applicable:**	No	**Compliant:**	N/A

☐ ☐ ⃠ The following accommodation structures are considered by the proponents to be a tolerable loss in the event of a bushfire. Consequently, there is to be no radiant heat limitations applied to these sites (i.e. no specified dimensioned APZ). These structures are:

- Caravan and camping sites; and
- Eco tents and cabins.

Supporting Assessment Details: None required.

A5.7c Asset protection zone (APZ) – all other accommodation	**Applicable**:	Yes	**Compliant**:	Yes

APZ DIMENSIONS – DIFFERENCES IN REQUIREMENTS FOR PLANNING ASSESSMENTS COMPARED TO IMPLEMENTATION

A key required bushfire protection measure is to reduce the exposure of buildings/infrastructure (as exposed vulnerable elements at risk), to the direct bushfire threats of flame contact, radiant heat and embers and the indirect threat of consequential fires that result from the subsequent ignition of other combustible materials that may be constructed, stored or accumulate in the area surrounding these structures. This reduces the associated risks of damage or loss.

This is achieved by separating buildings (and consequential fire fuels as necessary) from areas of classified bushfire prone vegetation. This area of separation surrounding buildings is identified as the Asset Protection Zone (APZ) and consists of no vegetation and/or low threat vegetation (refer to Appendix B). The required separation distances will vary according to the site specific conditions and local government requirements.

The APZ dimensions stated and/or illustrated in this Report can vary dependent on the purpose for which they are 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 BAL-29' APZ DIMENSIONS

Purpose: To provide evidence of the development or use proposal's ability to achieve minimum vegetation separation distances. To achieve 'acceptable solution' planning approval for this factor, it must be demonstrated that the minimum separation distances corresponding to a maximum level of radiant transfer to a building of 29 kW/m^2, either exist or can be implemented (with certain exceptions). These separation distances are 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 sole purpose is to identify if an acceptable solution for planning approval can be met.

THE 'REQUIRED' APZ DIMENSIONS

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:

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'.

> *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.*

☑ ☐ ☐	**APZ Width:** Every existing or a future habitable building on the lot(s) of the proposed development, can be 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 a future building location that will result in that building 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 January 2024 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 existing or future building(s) 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 existing or future building(s) 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 (refer to Appendix B).
☐ ☐ ⊘	**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 and maintained in that condition in perpetuity (refer to Appendix B).
☑ ☐ ☐	**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).
☐ ☐ ⊘	**Subdivision Staging:** There are undeveloped future stages of subdivision, containing bushfire prone vegetation, that have been taken into consideration for their potentially 'temporary' impact on the ability to establish a 'Planning BAL-29 APZ' on adjoining developed lots. A staging plan is developed to manage this.
☑ ☐ ☐	**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: Onsite native vegetation will be required to be modified and/or removed, for which the appropriate authority will be required (refer to Section 2 of this BMP).	
A5.7d Asset protection zone (APZ) – landscape management	**Applicable**: Yes **Compliant**: Yes
☑ ☐ ☐	The preparation of a landscape management plan, to identify ongoing onsite vegetation management, is appropriate for the proposed development. This will be prepared.
Supporting Assessment Details: Prior to development an approved landscape management plan with indicate ongoing vegetation management within the chalet asset protection zones.	

A5.7e Onsite shelter – pedestrian access paths	**Applicable**:	No	**Compliant**:	N/A

☐ ☐ ⃠ To comply with acceptable solution A5.8.2e (lack of vehicular access), pedestrian paths to an onsite shelter area or building, with the required signage, can and will be provided.

Supporting Assessment Details: None required.

A5.7f Onsite shelter – limit exposure to radiant heat flux	**Applicable**:	No	**Compliant**:	N/A

When an onsite shelter building and/or open space shelter area is to be provided in accordance with acceptable solution A5.8.2e (due to non-compliant access), the following requirements must be met as relevant.

☐ ☐ ⃠ The provided shelter building's exposure to the bushfire hazard threat of radiant heat will be limited to a maximum radiant heat flux of 10 kW/m^2 (calculated with an assumed flame temperature of 1200K), by establishing and maintaining the required separation distance from the bushfire hazard.

☐ ☐ ⃠ The provided open space shelter area will limit persons exposure to the bushfire hazard threat of radiant heat flux to 2 kW/m^2 (calculated with an assumed flame temperature of 1200K), by establishing and maintaining the required separation distance from the bushfire hazard.

Supporting Assessment Details: None required.

A5.7g Onsite shelter building – bushfire construction requirements	**Applicable**:	No	**Compliant**:	N/A

☐ ☐ ⃠ An onsite shelter building is to be provided in accordance with acceptable solution A5.8.2e (due to non-compliant access). It will be designed and constructed in accordance with the National Construction Code and the ABCB Community Shelter Handbook.

Supporting Assessment Details: None required.

A5.8 Vehicular Access - Assessment Against the Acceptable Solutions

A5.8.1 Vehicular Access for All Proposals

A5.8.1 Vehicular Access for All Proposals			**Compliant**:	Yes
A5.8.1a Internal access/private driveway - availability	**Applicable**:	Yes	**Compliant**:	Yes

☑ ☐ ☐ The internal vehicular access/private driveway can provide emergency access/egress for all patrons and staff in the event of a bushfire.

☐ ☐ ⃠ The internal vehicular access/private driveway provides at least two internal access/egress points to the public road network (note: the acceptable solution establishes this as a preference, if possible, not a requirement).

Supporting Assessment Details: Private driveway will allow access/egress for patrons and emergency access for emergency services.

A5.8.1b Internal access/private driveway - technical requirements	Applicable: Yes	Compliant: Yes
☑ ☐ ☐ The internal vehicular access/private driveway length is no greater than 70m. No technical requirements need to be met.		
☑ ☐ ☐ The technical construction requirements for widths, clearances, capacity, gradients and curves (Guidelines, Table 6. Refer also to Appendix C in this BMP), can and will be complied with.		
☑ ☐ ☐ Passing bays can and will be installed every 200m with a minimum length of 20m and a minimum additional trafficable width of 2m.		
☑ ☐ ☐ The turnaround area requirements (Guidelines, Figure 28, and within 30m of the habitable building) can and will be complied with.		
Supporting Assessment Details: Passing bays will be installed every 200m as shown in Figure 3.1.1		
A5.8.1c Signage – access routes and actions	**Applicable**: Yes	**Compliant**: Yes
☑ ☐ ☐ The required information to inform the actions of those persons onsite in the event of a bushfire will be prominently displayed within the site.		
☑ ☐ ☐ This information will include evacuation routes and distance and the site specific procedural detail that will be established by the Bushfire Emergency Plan (or Information) that is required to be developed for the proposed use.		
Supporting Assessment Details: Appropriate signage will be provided, and a poster will be available within each chalet showing evacuation routes.		
A5.8.2 Vehicular Access for Short Term Accommodation Outside a Residential Built-out Area		
A5.8.2 Vehicular Access for Short Term Accommodation Outside a Residential Built-out Area		**Compliant**: Yes
A5.8.2a Multiple access routes	**Applicable**: Yes	**Compliant**: Yes
☑ ☐ ☐ Two-way public vehicular access is available. Access is provided in two different directions to at least two different suitable destinations.		
Supporting Assessment Details: Chittering Road provides appropriate two-way access for the lot.		
A5.8.2b No-through public roads – maximum length	**Applicable**: No	**Compliant**: N/A
☐ ☐ ⦸ The classified vegetation adjoining the no-through public road (excluding the road reserve) servicing the proposed development, is categorised an Extreme Bushfire Hazard Level (Guidelines, Table 3). The no-through road is unavoidable and is no longer than 200 metres.		
☐ ☐ ⦸ The classified vegetation adjoining the no-through public road (excluding the road reserve) servicing the proposed development, is categorised a Moderate Bushfire Hazard Level (Guidelines, Table 3). The no-through road is unavoidable and is no longer than 500 metres.		

☐ ☐ ⊘	The classified vegetation adjoining the no-through public road (excluding the road reserve) servicing the proposed development, is categorised a Low Bushfire Hazard Level (Guidelines, Table 3), or is not identified as bushfire prone. The no-through road is unavoidable and is not subject to any length limitation.
Supporting Assessment Details: None required.	

A5.8.2c Emergency access way – an option as a secondary access route	**Applicable**:	No	**Compliant**:	N/A

Where it is demonstrated that the requirements for two-way public vehicular access and restricted no-through road length (established by A5.8.2a and A5.2.8b) cannot be achieved – an emergency access way (EAW) can be considered an acceptable solution for providing the secondary access. The following requirements are to be met.

☐ ☐ ⊘	The proposed or existing EAW provides a through connection to a public road.
☐ ☐ ⊘	The proposed or existing EAW is less than 500m in length and will be signposted and gated (remaining unlocked) to the specifications stated in the Guidelines and/or required by the relevant local government.
☐ ☐ ⊘	The technical construction requirements for widths, clearances, capacity, gradients and curves (Guidelines, Table 6. Refer also to Appendix C in this BMP), can and will be complied with.
Supporting Assessment Details: None required.	

A5.8.2d Public roads - technical requirements	**Applicable**:	Yes	**Compliant**:	Yes

☑ ☐ ☐	The technical construction requirements of vertical clearance and weight capacity (Guidelines, Table 6. Refer also to Appendix C in this BMP), can and will be complied with.
☐ ☐ ⊘	The applicable class(s) of road and technical requirements have been confirmed with the relevant local government/Main Roads WA. These can and will be complied with.
☐ ☐ ⊘	It is recommended a traversable verge is available adjacent to classified vegetation to allow for emergency vehicles to stop and operate on the side of the public road, specifically where the road traverses large areas of classified vegetation (Guidelines, E3.1).
Supporting Assessment Details: No new public roads will be constructed as part of this development. Existing roads are compliant with Main Roads standards.	

A5.8.2e Onsite shelter - an option when secondary access not available	**Applicable**:	No	**Compliant**:	N/A

Where it is demonstrated that the requirements for two-way vehicular access and restricted no-through road length (established by A5.8.2a, A5.8.2b and A5.8.2c) cannot be achieved – an onsite shelter (building or open space area) is to be provided. The following requirements are to be met.

☐ ☐ ⃠	The capacity of the proposed development is no greater than 100 guests and staff at any one time.
☐ ☐ ⃠	An onsite shelter (building or open space area) can and will be provided in accordance with the requirements stated in A5.7e, A5.7f and A5.7g - Siting and Design, to limit radiant heat exposure levels for the building or persons, apply stated bushfire construction requirements and install the required pedestrian paths and signage.
Supporting Assessment Details: None required.	

A5.9 Provision of Water for Firefighting Purposes - Assessment Against the Acceptable Solutions				
A5.9 Provision of Water for Firefighting Purposes			**Compliant**:	Yes
A5.9a Reticulated supply	**Applicable**:	No	**Compliant**:	No
☐ ☐ ⃠	A reticulated water supply is available to the proposed development. The existing hydrant connection(s) are provided in accordance with the specifications of the relevant water supply authority.			
☐ ☐ ⃠	A reticulated water supply is available to the proposed development. Hydrant connection(s) can and will be provided in accordance with the specifications of the relevant water supply authority.			
Supporting Assessment Details: None required.				
A5.9b Non-reticulated supply	**Applicable**:	Yes	**Compliant**:	Yes
☑ ☐ ☐	A static water supply (tank) for firefighting purposes will be installed on the lot that is additional to any water supply that is required for drinking and other domestic purposes.			
☑ ☐ ☐	The technical requirements (location, volumes, design, materials, pipes and fittings), as established by the Guidelines (Schedule 2 and E4) and/or the relevant local government, can and will be complied with.			
Supporting Assessment Details: A firefighting water tank sited on site (see Figure 3.1.1). Refer to information contained in Appendix D for the firefighting water supply specifications and technical requirements.				

6 BUSHFIRE PROTECTION MEASURES - RESPONSIBILITY FOR IMPLEMENTATION CHECKLIST

6.1 Developer / Landowner Responsibilities – Prior to Sale / Building and Occupancy

DEVELOPER/LANDOWNER RESPONSIBILITIES – PRIOR TO SALE /BUILDING AND OCCUPANCY	
No.	Implementation Actions
1	The local government may condition a development application approval with a requirement for the landowner/proponent 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'*. 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 owners cost; and 3. That additional planning and building requirements may apply to development on this land.
2	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. 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).
3	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 DPLH, 2021 v1.4, Schedule 1, or as varied by the local government through their annually issued firebreak / hazard reduction notice when the variations have been endorsed by the WAPC and DFES as per s4.5.3 of the Guidelines. 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).
4	Prior to sale or occupancy, a copy of the Bushfire Emergency Plan (BEP) must be provided to the landowner, and they are to be informed that it contains responsibilities that must be actioned due to the use of the land

	being defined as a 'Vulnerable Land Use' for the reasons identified in Section 1.1. The 'Pre-Season Preparation Procedure' instructions must be complied with.
5	Prior to occupancy, construct the private driveways to comply with the technical requirements referenced in the BMP.
6	Prior to occupancy, install the required firefighting static water supply to comply with the technical requirements stated in the BMP.
7	Prior to occupancy, for the 'vulnerable' land use, there is an outstanding obligation, created by this Bushfire Management Plan, for a Bushfire Emergency Plan for proposed occupants to be developed and approved.
8	Prior to occupancy, signage must be prominently displayed within the site that informs the actions of those persons onsite in the event of a bushfire. This will include evacuation route information, site procedures – as per the instructions within the Bushfire Emergency Plan developed for the site and use.
9	Prior to occupancy, all actions contained within the 'Pre-Season Preparation Procedure' established by the Bushfire Emergency Plan, must be completed.

6.2 Landowner / Occupier Responsibilities – Ongoing Management

LANDOWNER/OCCUPIER – ONGOING MANAGEMENT	
No.	Management Actions
1	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 • The standards established by the Guidelines DPLH, 2021 v1.4, Schedule 1, or as varied by the local government through their annually issued firebreak / hazard reduction notice when the variations have been endorsed by the WAPC and DFES as per s4.5.3 of the Guidelines.
2	Comply with the Shire of Chittering Firebreak and Hazard Reduction 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.
4	Maintain the static firefighting water supply tank and associated pipes/fittings/pump and vehicle hardstand in good working condition.
5	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. 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.
6	Ensure all future buildings the landowner has responsibility for, are designed and constructed in full compliance with: • 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.

7	Annually review the Bushfire Emergency Plan and complete all actions contained within the 'Pre-Season Preparation Procedure' and the 'In-Season Preparation Procedure' at the appropriate times of the year.
8	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.

6.3 Local Government Responsibilities – Ongoing Management

LOCAL GOVERNMENT – ONGOING MANAGEMENT	
No.	Management Actions
1	Monitor landowner compliance with the annual Shire of Chittering Firebreak and Hazard Reduction Notice with any bushfire protection measures that are: • Established by this BMP; • Are required to be maintained by the landowner/occupier; and • Are relevant to local government operations.

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:	WA	Region:	Whole State	Method 1	Applied FDI:	80
				Method 2	Applied FFDI:	N/A
					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 cl 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 s2.2.3.2(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
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.

VEGETATION AREA 1						
Classification	**A. FOREST**					
Types Identified	Open forest A-03					
Exclusion Clause	N/A					
Effective Slope	Measured	d/slope 4 degrees	Applied Range (Method 1)	Downslope >0-5 degrees		
Foliage Cover (all layers)	30-70%	Shrub/Heath Height	1-2m	Tree Height	8-12m	
Dominant & Sub-Dominant Layers (species as relevant)	Mixed eucalyptus species including jarrah up to 12m in height.					
Understorey:	Grass trees and scattered banksia up to 2m over low shrubs.					
Additional Justification:	Not Required.					
Post Development Assumptions:	N/A					

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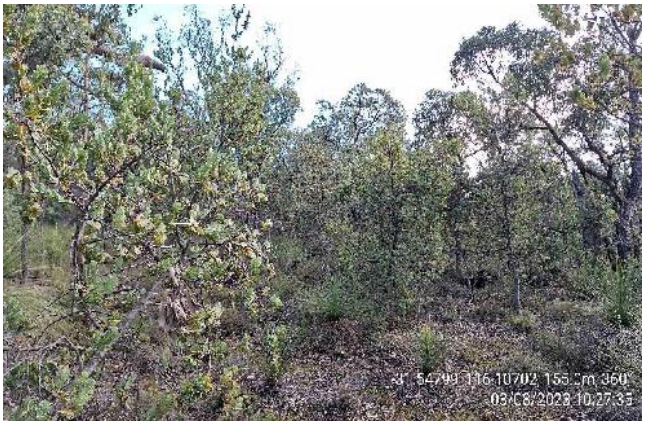
VEGETATION AREA 2						
Classification	**A. FOREST**					
Types Identified	Open forest A-03					
Exclusion Clause	N/A					
Effective Slope	Measured	flat 0 degrees	Applied Range (Method 1)	Upslope or flat 0 degrees		
Foliage Cover (all layers)	30-70%	Shrub/Heath Height	1-2m	Tree Height	8-12m	
Dominant & Sub-Dominant Layers (species as relevant)	Mixed eucalyptus species including jarrah up to 12m in height.					
Understorey:	Grass trees and scattered banksia up to 2m over low shrubs.					
Additional Justification:	Not Required.					
Post Development Assumptions:	Area to be managed to a low threat state. All remaining trees to be pruned up to 2m and understory to be managed in perpetuity.					



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VEGETATION AREA 3	
Classification	**EXCLUDED**
Exclusion Clause	2.2.3.2 (e) non-vegetated areas and (f) low threat vegetation - reduced flammability.
Additional Justification:	Excluded areas include existing driveways for the lot and neighbouring block. These exist as compacted gravel tracks.
Post Development Assumptions:	Areas to remain non vegetated in perpetuity.

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A1.3: EFFECTIVE SLOPE

Measuring

Effective slope refers to the slope "under the classified vegetation which most significantly influences bushfire behaviour (AS 3959:2018, clause B4, CB4). It is not the average slope.

It is described as upslope, flat or downslope when viewed from the exposed element (e.g., building) looking towards the vegetation – and measured in degrees. Ground slope has a direct and significant influence on a bushfire's rate of spread and intensity, which increases when travelling up a slope.

The slope under the vegetation in closest proximity to the exposed element(s), over the distance that will most likely carry the entire depth of the flaming front, will be a significant consideration in the determination of the effective slope. This distance is determined as a function of the potential quasi-steady rate of spread and expected residence time (i.e., the flaming combustion period at a single point on the ground), of a bushfire in the specific vegetation type/landscape scenario.

Slope Variation Within Areas of Vegetation

Where a 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.

Slope Variation Due to Multiple Development Sites

When the effective slope, under a given 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).

Differences in Application of Effective Slope - AS 3959:2018 Method 1 versus Method 2 Procedures

The Method 1 procedure provides five different slope ranges from flat (including all upslopes) to 20 degrees downslope to define the effective slope and bushfire behaviour model calculations apply the highest value in each range (i.e., 0^0, 5^0, 10^0, 15^0 or 20^0).

The Method 2 procedure requires an actual slope (up or down in degrees) to be determined. AS 3959:2018, clause B1 limits the effective slope that can be applied to 30 degrees downslope and 15 degrees upslope. Where any upslope is greater than 15 degrees, then 15 degrees is to be used.

SITE ASSESSMENT DETAILS - EXPLANATION & JUSTIFICATION

The effective slopes determined from the site assessment are recorded in Table 3.2 of this Bushfire Management Plan. When their derivation requires additional explanation and justification, this is provided below.

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 determined 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 indicative 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, indicative BAL 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 determined 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.

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APPENDIX B: ADVICE - ONSITE VEGETATION MANAGEMENT - THE APZ

THE ASSET PROTECTION ZONE (APZ) - DESCRIPTION

This is an area surrounding a habitable building containing low threat fire fuel fuels (including vegetation), or vegetation managed in a minimal fuel condition, no fire fuels or any combination. The primary objectives include:

- To ensure the building is sufficiently separated from the bushfire hazard to limit the impact of its direct attack mechanisms. That is, the dimensions of the APZ will, for most site scenarios, remove the potential for direct flame contact on the building, reduce the level of radiant heat to which the building is exposed and ensure some reduction in the level of ember attack (with the level of reduction being dependent on the vegetation types of present);
- To ensure any vegetation retained within the APZ is low threat and/or is managed in a minimum fuel condition and prevents surface fire spreading to the building;
- To ensure other combustible materials that can result in consequential fire (typically ignited by embers) within both the APZ and parts of the building, are eliminated, minimised and/or appropriately located or protected. (Note: The explanatory notes in the Guidelines provide some guidance for achieving this objective and other sources are available. Research shows that consequential fire, ignited by embers, is the primary cause of building loss in past bushfire events); and
- 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/m^2. 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/m^2 and 2 kW/m^2 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

DETERMINATION OF THE 'REQUIRED' APZ DIMENSIONS TO BE IMPLEMENTED AND MAINTAINED BY LANDOWNER WITHIN THEIR LOT									
Relevant Buildings(s)	Vegetation Classification [Refer to Fig 3.1]		Minimum Required Separation Distances from Building to Vegetation (metres)						
			Established by the 'BAL Rating' APZ Dimension					Established by the "Local Government' APZ Dimension	The 'Required' APZ Dimensions [see note]
			Determined Radiant Heat Impact	Stated 'Indicative' or 'Conditional' BAL				Firebreak / Hazard Reduction Notice	
	Area	Class		BAL-29	BAL-19	BAL-12.5	BAL-LOW		
Accommodation Units 1-4 and Admin building	1	(A) Forest	N/A	27	37	50	100	20	27
	2	(A) Forest		21	31	42	100	20	21
	3	Excluded cl 2.2.3.2(e & f)		-	-	-	-	-	

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: In accordance with the Shire of Chittering Firebreak Notice:

- Create an Asset Protection Zone (APZ) by installing and maintaining a 20 metre fuel reduced zone around all buildings or an asset of value
- Trees over 5 metres in height within the APZ, must be under pruned to a clearance of 2 metres from the ground.
- Trees and shrubs within 2 metres of the asset, must not exceed 2 metres in height.
- Install and/or upgrade firebreaks.

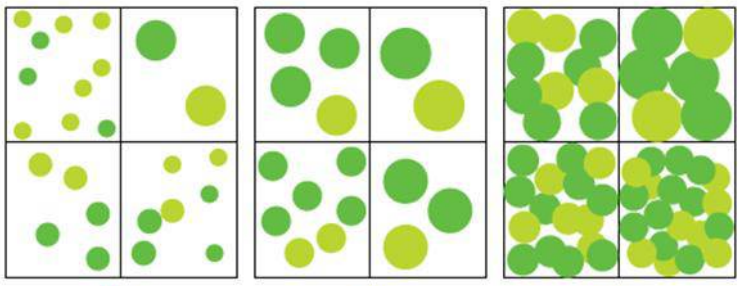
B2: The Standards for the APZ as Established by the Guidelines (DPLH, v1.4)

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.

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 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). • Mulches should be non-combustible such as 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 overhang 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. • 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 19:** Tree canopy cover – ranging from 15 to 70 per cent at maturity  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.

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).

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.

(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.

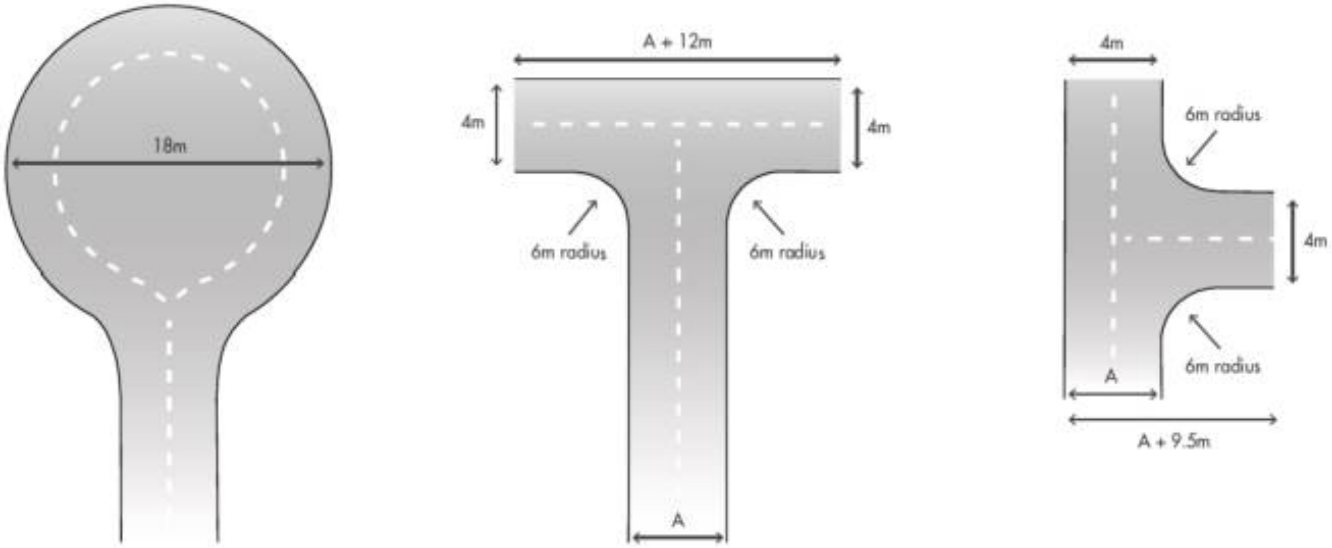
APPENDIX C: TECHNICAL REQUIREMENTS FOR VEHICULAR ACCESS

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

Technical Component	Vehicular Access Types / Components			
	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 (t)	15			
Maximum Grade Unsealed Road [3]	As outlined in the IPWEA Subdivision Guidelines	1:10 (10%)		
Maximum Grade Sealed Road [3]		1:7 (14.3%)		
Maximum Average Grade Sealed Road		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

D2: Non-Reticulated Areas – Static Supply

For specified requirements, refer to the Guidelines Element 4: Water – Acceptable Solution A4.2 , Explanatory Notes E4 (that provide water supply establishment detail under the headings of water supply; independent water and power supply; strategic water supplies, alternative water sources and location of water tanks) and the technical requirements established by Schedule 2 (reproduced below).

SCHEDULE 2: WATER SUPPLY DEDICATED FOR BUSHFIRE FIREFIGHTING PURPOSES

2.1 Water supply requirements

Water dedicated for firefighting should be provided in accordance with Table 7 below, and be in addition to water required for drinking purposes.

Table 7: Water supply dedicated for bushfire firefighting purposes

PLANNING APPLICATION	NON-RETICULATED AREAS
Development application	10,000L per habitable building
Structure Plan / Subdivision: Creation of 1 additional lot	10,000L per lot
Structure Plan / Subdivision: Creation of 3 to 24 lots	10,000L tank per lot **or** 50,000L strategic water tank
Structure Plan / Subdivision: Creation of 25 lots or more	50,000L per 25 lots or part thereof Provided as a strategic water tank(s) or 10,000L tank per lot

2.2 Technical requirements

2.2.1 Construction and design

An above-ground tank and associated stand should be constructed of non-combustible material. The tank may need to comply with AS/NZS 3500.1:2018.

Below ground tanks should have a 200mm diameter access hole to allow tankers or emergency service vehicles to refill direct from the tank, with the outlet location clearly marked at the surface. The tank may need to comply with AS/NZS 3500.1:2018. An inspection opening may double as the access hole provided that the inspection opening meets the requirements of AS/NZS 3500.1:2018. If the tank is required under the BCA as part of fire hydrant installation, then the tank will also need to comply with AS 2419.

Where an outlet for an emergency service vehicle is provided, then an unobstructed, hardened ground surface is to be supplied within four metres of any water supply.

2.2.2 Pipes and fittings

All above-ground, exposed water supply pipes and fittings should be metal. Fittings should be located away from the source of bushfire attack and be in accordance with the applicable section below, unless otherwise specified by the local government.

2.2.2.1 Fittings for above-ground water tanks:

- Commercial land uses: 125mm Storz fitting; or
- Strategic water tanks: 50mm or 100mm (where applicable and adapters are available) male camlock coupling with full flow valve; or
- Standalone water tanks: 50mm male camlock coupling with full flow valve; or
- Combined water tanks: 50mm male camlock coupling with full flow valve or a domestic fitting, being a standard household tap that enables an occupant to access the water supply with domestic hoses or buckets for extinguishing minor fires.

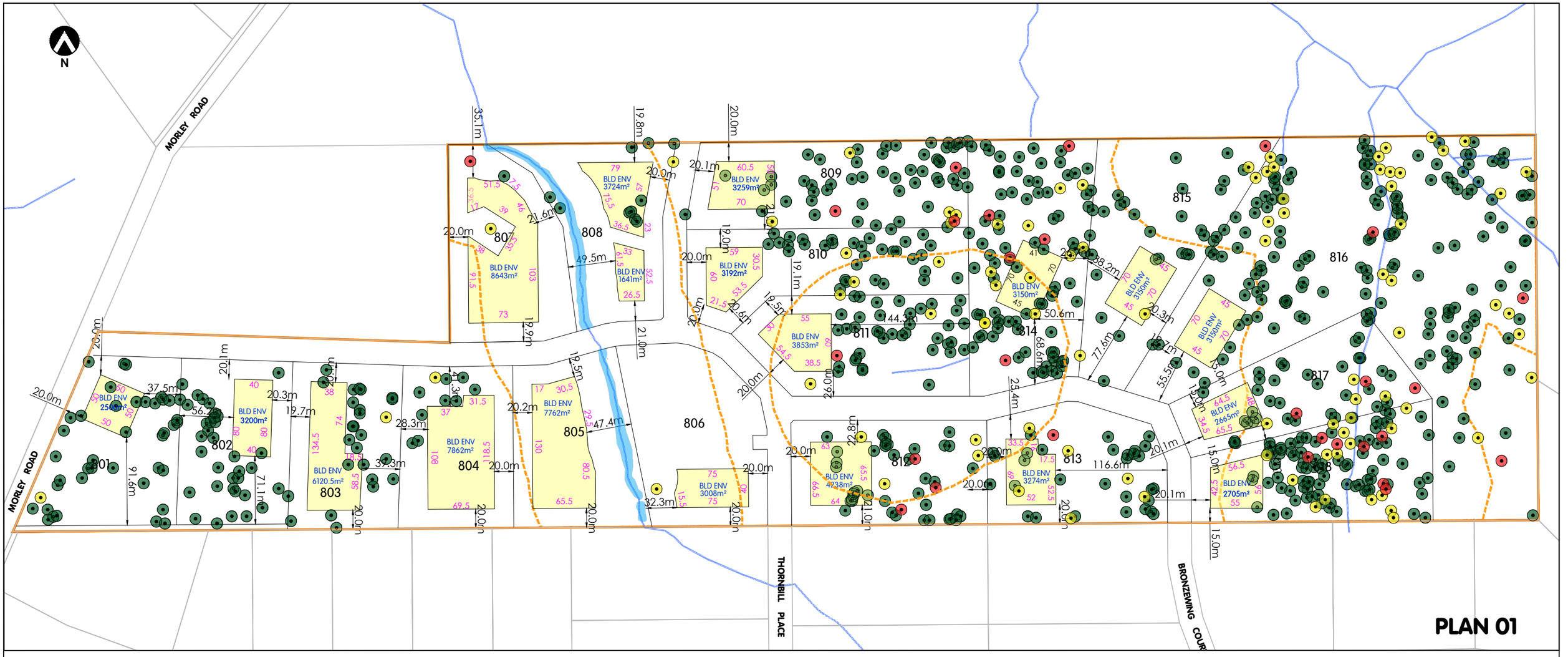
2.2.2.2 Remote outlets

In certain circumstances, it may be beneficial to have the outlet located away from the water supply. In such instances in which a remote outlet is to be used, the applicant should consult the local government and DFES on their proposal.

EXAMPLE CONSTRUCTION AND FITTINGS	
	
Strategic 47,000 Litre Concrete Tank & Protected Fittings	
	
10,000 Litre Concrete Tank	Storz and Camlock Couplings
	
Full Flow 50mm Ball Valve	Full Flow 50mm Gate Valve and Male Camlock

ADDENDUM: FLORA AND VEGETATION SURVEY CHITTERING 2023

To be provided by proponent



LEGEND

- SITE LOT BOUNDARY
- 12 — LOT NUMBERS
- EXISTING WATER COURSES
- BLD ENV 3008m² — BUILDING ENVELOPE
- HABITAT TREE - NO HOLLOWS SEEN
- HABITAT TREE - ONE OR MORE POSSIBLE HOLLOWS, NONE SUITABLE FOR BLACK COCKATOOS
- HABITAT TREE - ONE OR MORE HOLLOWS POSSIBLY SUITABLE FOR BLACK COCKATOOS
- 100M WASTE WATER TREATMENT AREA SETBACK

PROVISIONS

General

1. The provisions of the Shire of Chittering Local Planning Scheme No.6 are varied within this LDP. All other requirements of the Scheme shall be satisfied.

Building Envelopes

2. All development is to be located within the prescribed building envelopes.

Waste Water Disposal Area

3. All wastewater associated with Aerobic Treatment Units (ATU) is to be disposed outside of the 100m waste water treatment setback.

Trees

4. No Trees are to be removed from the site without the prior consent of the Shire.
5. The Shire will not support the removal of the yellow or red Habitat Trees, as identified on Plan 01.

This Local Development Plan has been approved by the Shire of Chittering under clause 52(1)(a) of the deemed provisions of Local Planning Scheme No.6

....
Executive Manager Development Services Date

CADASTRAL INFORMATION
SOURCE: LANDGATE
YYMMDD: 201023
DWG REF: CHITTERING_CAD_201023
PROJECTION: GDA94
AERIAL PHOTOGRAPHY
SOURCE: NEARMAP
YYMMDD: 200509

HATCH

SIZE A3 1:4000

0 metres 40 80 120 160 200

REV	DESCRIPTION	YYMMDD	DRAWN	APPR'D
F	ADJUSTMENTS FOR PROVISIONS	250114	HL	RDa
E	UPDATE	241210	YS	RDa
D	UPDATE	241206	HL	RDa
C	ISSUE FOR PERMIT APPLICATION	241204	HL	RDa
B	ISSUE FOR PERMIT APPLICATION	241203	HL	RDa
A	ISSUE FOR PERMIT APPLICATION	240109	HL	RDa

LOCAL DEVELOPMENT PLAN (WAPC REF: 164182)
M1942 Morley Road, Lower Chittering
Shire of Chittering

JOB CODE	SERVICE	DOC.TYPE	DRAW NO.	REV.
CPGCHI	**DES**	**DWG**	**006**	**F**

AGENCY SUBMISSIONS			
Submitter	**Comment**	**Proponent Response**	**Shire Officer Response**
Department of Water and Environmental Regulation	Thank you for the above referral. The Department of Water and Environmental Regulation has considered the proposal and has no objections and no further comments.	Noted there are no objections from DWER	Noted.
Department of Health	The DoH provides the following comments: ***1.Waste Water Management*** •The disposal of wastewater generated on site must comply with the *Health(Treatment of Sewage and Disposal of Effluent and Liquid Waste) Regulations 197*4 and Government Swerage policy 2019. •A Site and Soil Evaluation (SSE) will need to be conducted by a qualified consultant during the wettest seasonal period (July to August), in accordance with AS/NZS 1547:2012, to ensure the land application area is properly located and sized. •DOH had previously provided comments to the subdivision application (WAPC application number 164182) requesting a site specific SSE report done accordance with AS/NZS 1547:2012 . ***2.Drinking Water Management*** •All drinking water provided on site, especially relating to a food premises or food production, must meet the health-related requirements and risk management framework set out in version 3.7 of the Australian Drinking Water Quality Guidelines 2011, to the satisfaction of the local government. These are highlighted in principle in the following link: https://www.health.wa.gov.au/Articles/N_R/Reticulated-drinking-water-scheme-providers. •Any non-drinking water (i.e., water that is not intended or suitable for drinking)must be managed to ensure it cannot be confused with or contaminate the drinking water supply. This requires satisfactory labelling of non-drinking water taps and depending on system configuration and suitable backflow prevention arrangements.	1. The wastewater requirements have been fully investigated and reported as per that of Urbaqua's Urban Water Management Plan and the development is in accordance with the relevant regulations and policies set out by the Health Department. Extensive soil evaluation tests were carried out in both dry and wettest season with results tabulated in the Urban Water Management Plan in accordance with AS/NZS 1547:2012 where the location and size of the land application areas are provided in conformance with these regulations. 2. There is no reticulated drinking water required for these lots and each property owner will need to comply with the relevant regulations relating to drinking water via use of rainwater tanks,	Shire officers are satisfied that the relevant studies have been conducted to inform waste water disposal, and that each lot has the capacity to house an on-site waste water disposal system.
Chittering Landcare Group	We have looked closely at this new plan and would have to congratulate the developers on trying their very best to satisfy all conditions required from the first submission. The Chittering Landcare officers have some concerns about Lots 807, 805, 808 and 811. There appears to be very little room for a suitable building envelope and ATU position that satisfies the need for the setback for waterway buffers. This may require careful consideration by the landholders and the Shire in the placement of a home on these blocks.	All ATU's within this development are located 100m away from all waterways and this is clearly documented in the Urban Water Management Plan where the location of each waste water application area is clearly marked with the 100m buffers shown on the plans. This is also supported by Clause 3 of the LDP, which reads: *3. All wastewater associated with Aerobic Treatment Units (ATU) is to be disposed outside of the 100m waste water treatment setback*.	Shire officers are satisfied that the relevant studies have been conducted to inform waste water disposal, and that each lot has the capacity to house an on-site waste water disposal system.

	There appears to be no issues with the forage trees and it appears no nesting trees need to be removed. Judicious pruning and maintenance of understory should satisfy Bushfire safety.	All building envelopes have been carefully designed and located to avoid all nesting trees.	
Department of Biodiversity, Conservation and Attractions	In reference to your correspondence dated 22 January 2025, the Parks and Wildlife Service of the Department of Biodiversity, Conservation and Attractions (DBCA) provides the following comments. **Black Cockatoo habitat** DBCA notes that the flora and vegetation survey (Focussed Vision, 2021) identified the presence of vegetation that has the potential to be black cockatoo foraging, roosting and possibly breeding habitat within the subject site. Commonwealth referral guidelines for black cockatoos, published by the Commonwealth Department of Climate Change, Energy, the Environment and Water (SEWPaC 2012), indicate that clearing of any actual or potential breeding habitat trees, over 1 ha of foraging habitat or any roost trees would be considered as having a high risk of "significant impact" on one or more of the black cockatoo species and as such the proposal may require referral to the Commonwealth for assessment under the EPBC Act.	Noted. A core component of the project design was to avoid disturbance to potential black cockatoo habitat areas as much as possible, with roads and building envelopes being located predominantly within cleared or disturbed areas. This approach has continued through the implementation planning, including holding onsite meetings between the proponent and the Shire of Chittering to finalise the location of fire service access routes (FSAR) to avoid/minimise vegetation impacts. The proponent is aware of the requirements of the EPBC Act and will take this into consideration when assessing the potential need for a referral.	Shire officers have liaised with the applicant to adjust the location of the building envelopes in an effort to protect as many of the Black Cockatoo habitat trees as possible.
	The supporting documentation did not provide specific quantification of the amount of black cockatoo habitat likely to be cleared and as such it is difficult to determine the potential impact of the proposal on black cockatoos.	Black Cockatoo habitat was assessed for the proposal in 2021 by experienced zoologist, Dr Greg Harewood, and the report was presented with subdivision supporting documentation. The development design and proposed implementation has considered the results of this assessment, as follows: • Selecting building envelope locations to minimise trees in the envelope or APZ • Road alignment located to minimise potential impacts to trees • Meandering/locating FSAR to avoid trees • Advising landowners that they will require Shire approval prior to clearing of any habitat trees which contain hollows possibly suitable for Black Cockatoos • Retaining trees in road reserves, where possible.	Noted.
	DBCA notes that the majority of the proposed building envelopes have been located outside of areas of better-quality vegetation and avoid habitat trees with hollows possibly suitable for black cockatoos, however there is potential for significant trees to be cleared to establish asset protection zones, access roads and potentially fence lines and firebreaks. Given the development may result in direct and indirect impacts to occurrences and habitat of threatened fauna species (black cockatoos) listed as threatened under the Commonwealth Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act), the proponent should contact the Commonwealth Department of Climate Change, Energy, the Environment and Water for further information on their referral responsibilities.	Noted. The proponent is aware of the requirements of the EPBC Act and will take this into consideration when assessing the potential need for a referral.	The Shire has made the applicant aware of the requirements for potential referral of any clearing activities under the EPBC Act.
	DBCA recommends that the planning for the site makes every effort to retain black cockatoo habitat. The cumulative impacts associated with the loss of black cockatoo habitat is reducing the amount of habitat and reducing the number of birds that can be supported in the region. In the respective black cockatoo recovery plans, they note that reversal of threats (including loss of habitat) is required before significant increases in the cockatoo populations can occur. The Recovery Plan's identify the need to protect and manage as much habitat as possible to minimise the impacts of habitat loss. Therefore, all remaining resources are significantly important to black cockatoos.	Noted. The client has undertaken extensive on-ground consultation with the Shire of Chittering in relation to retention of possible Black Cockatoo habitat trees across the site, and through firebreaks. The project design has been amended on account of maximising tree preservation throughout the site.	Noted.

	If trees with suitable hollows are identified and are proposed to be cleared within the breeding period, they must first be inspected by a suitably experienced fauna specialist to ensure that nesting is not occurring. If the inspection identifies nesting birds, a section 40 authorisation under the WA Biodiversity Conservation Act (BC Act) will be required. Where nesting is occurring, trees are to be demarcated and avoided, until after the cockatoos have naturally completed nesting (i.e. chick has fledged and dispersed from the hollow).	A fauna specialist would be engaged to undertake a pre-clearing assessment of potential nesting trees which were identified to contain hollows possibly suitable for Black Cockatoos during the fauna survey. Should any trees be observed to contain nesting black cockatoos, DBCA will be contacted and disturbance to the tree will be avoided until the cockatoos have naturally completed nesting.	Noted.
	Native vegetation clearing DBCA notes that the majority of the proposed building envelopes appear to be located in areas identified as completely degraded or degraded condition vegetation. The department supports this approach to reduce the amount of clearing in areas of good quality vegetation. The department however notes that the subdivision supporting documents fails to adequately quantify the amount of vegetation clearing required for proposed lot boundaries and associated clearing for fences, driveways and bushfire protection and accordingly the proposal has the potential to impact of areas mapped as "good" condition. It is recommended that mechanisms are implemented to reduce and avoid vegetation clearing impacts. For example, the proposal could reduce boundary clearing through the implementation of boundary delineation markers in place of formal fence lines etc.	Subdivision planning for construction has focused on limiting vegetation clearing. Additional measures proposed to minimise impacts include: • Finalising the location of FSARs in consultation with the Shire to minimise clearing • Advising landowners that consultation with the Shire if required prior to clearing any trees with possible nesting hollows. Some additional planting of Black Cockatoo habitat species onsite will be considered to replace/provide additional habitat opportunities in the future (i.e. once these trees mature).	Clearing associated with the incidental components of the subdivision is being conducted in consultation with the Shire (i.e. construction of Fire Service Access Routes, boundary fencing) with an intent for as much of the native vegetation to be preserved.
PUBLIC SUBMISSIONS			
Submitter	**Comment**	**Proponent Response**	**Shire Officer Response**
Les Prisk **Lower Chittering**	The changes to the stormwater disposal at the eastern end of Bronzewing Court have begun without any consultation with adjoining land owners. Are the existing soak wells to be retained?, backfilled ?, maintained? Will the emergency services (Fire Brigade) access route be reinstated taking into account the size of fire vehicles requiring access - approach and departure angles Are the existing boundary fences (in poor condition) being replaced by the developer ? The plan does not show where HV transformers and street lighting are being placed, will the street light at the eastern end of Bronzewing court be removed as the road will continue on and most lights installed in the last 2 years have been on intersections? In the original proposal (see Hatch DWG 004 Rev A) it was proposed that all buildings be constructed on raised pads, thus avoiding digging into the existing ground. Has this been changed? In addition the positioning of ATU's was detailed, in the new proposal there is a statement made that all wastewater "must be disposed of outside the 100m wastewater treatment setback". Looking at the building envelops on sites 807, 808, 805, 806, 817, 813 and taking into account the local topography and boundary setbacks, placement of ATU's may be a problem.	We had been advised by shire officers that this stormwater basin has a shire easement over it and all drainage design for this project complies with the Shire's engineering approved plans. The emergency access route has a shire easement over it and as this exists already there is no requirement from the Shire to create an additional emergency track and there is no requirement in the approval to do so. With regards to boundary dividing fences this is usually a matter between two adjoining landowners and any upgrading would be carried out equally by both property owners. The fences have been like this for a long time and this has not been an issue prior to development. All lots achieve shire setback requirements and the required buffers to waterways as reported in Urbaqua's Urban Water Management Plan, which has the application areas outside the 100m from waterways.	Matters regarding stormwater, drainage, fencing, street lighting and fire brigade access are being addressed by the Shire through the subdivision process. These matters are not elements of the Local Development Plan that need to be considered. The lots have designed as such so that a waste water system can be accommodated on each lot to achieve the necessary separation from a waterway.
Isabel Wyper **Lower Chittering**	Firstly thank for the update on the proposed development , I am sure that all of the resident that have properties in rosa Park estate in close proximity are very aware of what is going on, with all the noise and dust being created by all the heavy machinery being used, i am somewhat surprised	All work is being carried out in accordance with the shire approvals and the developer's consultants are in close communication with all relevant shire officers to ensure that operations are in accordance with what is required including that of any movement bans are in place.	Operational matters regarding the construction of the subdivision are not matters to be considered as part of the Local Development Plan.

	that this has been allowed to go on with all the fire restricted and movement bans in place due to the high temperatures and fire risks, but that is up to shire if chittering to manage. My comments: why is Lot no 818-building envelope only 15metres away from the site lot boundary and every other Lot building envelope on that side of the development is all 20metes or more (E.G. all the lots that back onto the exiting rosa park estate) Would there be a convenance to prevent 2 storey structure being developed and a restriction on the size of sheds being constructed on the building envelope. At the moment there is a streetlight at the' turn around' area at the end of bronzewing court i would personally want that to stay as there is not enough lighting in this area as it is, is there plans for that to remain? I would like to see the cross over from the existing bronzewing court to the new one to be a single road to encourage drivers to be aware of their speed on rural roads and to slow down, there are far too many speedsters and Hoons in this estate as it is. We have a lot of black red-tailed cockatoos living especially in the trees close to our property and in the said development site can you guarantee the habitat will not be destroyed ? Have you put a block on downloading this PDF as i can seem to print it off and i am having to constantly enlarge the document on you i pad can you send me is as a word document? I will wait your reply and, if in the meantime, I come up with more questions i will send you another e mail.	Lot 818 will achieve the required setbacks as per the Shire's Local Planning Scheme No. 6. All newly proposed houses and sheds will need to comply with the Shire policies and state government regulations and there are no covenant restrictions on two storey construction. The engineering plans that include street lighting has been approved by the Shire's engineering department and there are no plans to remove any existing streetlights. The roads will be designed to meet Shire requirements. All habitat trees have been identified via survey and will be retained and none of these trees are to be removed by the developer. Extensive work has been carried out to ensure all Habitat trees remain on site.	Lot 818 achieves the minimum side setback distance of 15m from a side boundary in accordance with the Shire's Local Planning Scheme No. 6 (LPS6). The majority of proposed properties that back on to the existing estate have a 20m setback as this will be regarded as their 'rear boundary' and are required to have a 20m setback distance in accordance with LPS6. The Shire can permit the construction of 2-storey dwellings on any Rural Residential zoned lot in the Shire. The extension of Bronzewing Court is a subdivisional matter to be addressed by the Shire, outside of the Local Development Plan process. The Black Cockatoo habitats have been mapped and identified on site, with both the developer and the Shire working on the location of the building envelopes to avoid disturbance to important habitat trees. Additionally, a provision has been included on the Local Development Plan that any removal of trees will require the approval of the Shire, with the removal of trees containing hollows not being permitted.
Jo & Jodie Beardsmore **Lower Chittering**	As owners of 33 Turtledove drive I would like to confirm and convey the following, • The fire break easement at the rear of our property is not included in anyway "shape or form" in the proposed building envelope of lots 802 & 803. As this easement forms part of our 5 acre property. • That fire access to the new building envelopes will include their own fire break easement at the rear of their properties with access to emergency vehicles from Morley road. I.e. Will they lose a 5-metre easement at the rear of the block also? o Any use of our fire break easement to access the new building envelope by emergency services would require multiple gate access which is not a financially viable option and would be detrimental to property values and community harmony. • There have been multiple cases in the past where new homeowners to the estate or undesirable members of the public have used the fire break	All existing emergency firebreaks have Shire easements over them and the land areas remain within the lot area where the easement is located and in this case the fire track area is not included within lots 802 and 803 but to the property at 33 Turtledove Drive. It is our understanding that the emergency fire easements are to be used by the Shire as and when required in the event of fires for all properties. Any gates within the emergency fire track will be provided in accordance with the Shire requirements and the tracks are not accessed or used by lots created within this development for personal uses such as dirt bikes etc.	The Shire has agreed to the reciprocal use of the Fire Service Access Route (FSAR) adjacent to the southern boundary of the subdivisional area, through the endorsement of the Scheme amendment (i.e. when the land was rezoned to Rural Residential). The FSAR is an easement in the favour of the Shire, to be used by emergency services, only. Landowner access from the new subdivisional lots onto the existing FSAR will not be permitted it is an easement for the use of the Shire and emergency services, only. Any unauthorised use of a FSAR (or similar) can be subject to law enforcement.

	easement as their own personal dirt bike track for recreational activities or to scope out properties. • That there is no proposed road planned for in between the existing and proposed envelope i.e. the fire break easement being used as a road. • That any water run off from extreme weather events from our property, or existing properties that back onto the proposed envelope, are managed and planned for in a manner by the shire, that is not financially detrimental to the existing homeowners or the proposed new owners of the building envelopes. • The rear of the proposed building envelopes of 803,804,805,806 are in close proximity to the rear of the existing homeowners on turtledove. The reason most have selected these blocks out in this estate, was due to unobstructed views and not to have to look into the rear of a neighbouring house. Whilst change is inevitable the existing property valuations could be affected which is not an ideal situation. Could consideration be made to increase the boundary between these from 20mtrs to 25-30mtrs or could the shire possibly plant additional trees to improve the view of existing homeowners.	There are no changes to ground earthwork levels at the rear boundaries of these lots. The post development ground levels are very similar to the pre-development levels therefore there are no changes that would create water run-offs into adjoining properties. The building envelope setbacks are in accordance with the relevant Shire setback requirements to achieve a minimum 20m setback from the rear boundary which is consistent with everyone building homes on the 5 acre lots.	Drainage management is a matter to be addressed by the Shire during the subdivision construction, and is not a matter to be considered as part of the Local Development Plan. The southern-most portion of the building envelopes identified by the submitter comply with the standard 20m setback requirement of the Shire's Local Planning Scheme. Officers believe that the location of the proposed building envelopes have taken into consideration the natural topography, existing vegetation and the location of existing dwellings in the Rosa Park Estate, to the extent that the amenity of the existing Rural Residential area has been suitably maintained.
Karen Booth **Lower Chittering**	I would like to comment on the proposed development. The building envelopes seem well placed, but I would like to see more trees protected. There are not many that will be safe from removal. Work has begun on the road and already a lot have trees have been cut down. I would like to see new trees planted along the road. On another note, since the works have started, we have been inundated with noise and dust. The new road runs along our boundary fence. Water trucks have been used but with the hot temps and wind it hardly makes a difference. Our house, sheds & vehicles are covered in dust every day. Not too sure what could be done about it, but it is making our life very uncomfortable...maybe a screen of trees/bushes along the road. I would be quite happy to have them planted on our side of the boundary fence. Might not help straight away but will help further down the track as building begins. At the very least it would go towards compensation for what we are having to put up with at the moment.	The developer has gone to great lengths to have all trees surveyed and the development has been designed the estate to be site responsive and a site sensitive design has been applied. It should be noted that the majority of existing trees have been retained and all habitat trees protected and retained within the development. With regards to dust and noise there are water trucks on site and the contractor is conscious of this issue and is making every effort to minimise dust movement.	Shire officers consider that the subdivisional design and works have protected as many of the significant vegetation as possible. While the developer may volunteer to place street trees in the road verge, it is not a subdivisional requirement for a Rural Residential subdivision. The matter regarding construction impacts relating to the subdivision works is a matter the Shire can address separately, but is not a consideration for the subject Local Development Plan.
Asha Burnett **Lower Chittering**	I, Asha Burnett, 26 Thornbill Pl (Lot 111) support this application on the provision that the building envelope on Lot 812 remains as is documented on the plan as indicated – we are directly next to Lot 812. If a change to this building envelope, Lot 812) were to occur – we will oppose the application. However as per current documentation we are happy to proceed as our privacy has been taken into consideration.	The location of the building envelopes is proposed as per the plan that was done so to minimise visual impact to the adjoining lot 111.	Noted.

*Note: Comments are as per original submission received by the Shire.

PUBLIC SUBMISSIONS		
Submitter	**Comment**	**Shire Officer Response**
John Watson	Over the last couple of months, I have contacted the Shire a number of times, to let them know of fires that have been started by people who have stayed overnight at the layby on the corner of Chittering Road and Julimar Road. The fires were put out, i assume by the Rangers who attended site. Unfortunately, the stones on the ground that formed the area for the fire to sit in, were left behind. I would say that leaving the stones in place would just encourage the next camping group to start another fire. I have also asked the Shire, by phone, to put a sign up informing the people who stop at this site that having a fire is illegal. Nothing as yet, has happened. Can you please confirm: • When was this area designated a camping site. • Why were local residents not consulted in the change to this designated area. • Why have signs, informing those that stop in that area, cannot start fires.	The corner of Julimar Road and Chittering Road is not a camp site but a road reserve which is being informally used for a quick stop and the Chittering Region Map is available at the site. The area is a road reserve and has not been changed to a designated 'road side rest area' or a caravan park. The road reserve will not be able to be designated as a caravan park or camp site as it does not comply with the requirements under the *Caravan Parks and Camping Ground Regulations 1997* to function as either. The Shire has recently put up signage which display "No fires allowed" to ensure fires are not lit at this road reserve area.
Nick Deathridge	1. When I originally purchased the property I was informed the areas both sides of Julimar Rd were road reserves set aside for improving the intersection. What is the exact classification of this area? 2. What is the process and timeline involved after submission of comments? 3. I've been asked to comment as a nearby landholder. What other stakeholder input has been sought? 4. Shire email says the area "will be designed for temporary overnight parking". How many vehicles, and of what configuration etc., will this design encompass? 5. Will this design involve removal of existing vegetation or impact upon the Brockton River. 6. Does the Shire have any traffic/usage figures relating to this area? 7. The Shire promotes the area as 'free camping'. Is there currently a management plan in place for this area? 8. Has a management plan been prepared regarding this space's use as a 24-Hour Rest Area? 9. What additional signage is anticipated, what form will it take, and where within the area will it be placed?	The corner of Julimar Road and Chittering Road is a road reserve. Submission for comments closed on 13 January 2025, but any submissions made after that are included. All landowners within the Shire of Chittering with a property on Julimar Road, as well as a 1-kilometre radius from the location have been given the opportunity to make a submission. The total number of properties consulted was 16. The allocation of parking bays or the capacity of the area could be further investigated and defined, should Council wish to proceed with the designation. The area will not be expanded or works will not be required and there will be no removal of vegetation or any direct impacts on the Brockman river. There are traffic figures available for Julimar Road, but no current data for usage of this portion of road reserve. A 'road side rest area' cannot be promoted as 'free camping' as that's not what it is intended to be used for. All previous erroneous advertising or promotion of this area as a free camping spot is no longer available on the Shire's digital platforms and has been removed. There is no management plan required however, as part of the Shire's regular maintenance schedule, this road side reserve has been maintained and will continue to be maintained as usual. Should Council decide to go ahead with designating the road reserve as a roadside rest area, signage permitting 24-hour camping shall be erected in a prominent position, visible to all motorists entering the rest area.

Robyn Hancock	We throughly disagree with this proposal! We live on the corner of Julimar and Chittering Road and even now camping people are climbing our fence to take photos with our highland cows. It only does this upset the cows but also ruins the fencing. Imagine the results if you follow through with this idea. Is there a council meeting for residents to discuss this? What is our best options to stop this ludicrous idea?	Noted. Shire contacted submitter to advise about Council meeting information. People entering private property and trespassing should be dealt with by police. However, if endorsed by Council, the Shire can provide signage to surrounding properties indicating that it is private land and no trespassing.
	As previously stated the idea of a truck/ rest stop here is really ridiculous. You insisted on changing the road which has now ruined the integrity of our embankment and refused to take liability. Now you want to make further changes and waste taxpayers money. There are very few people who are going to go to the toilets you suggest, they will go where they park so if you find this necessary put it near the toilets. The bin was removed from that park area due to rubbish being left and dumped what do you imagine will happen if this goes through? The fire risk is increased every time someone stops there.	There are no changes required to be made to the area, which means only a minimal cost would be required to erect signage. It is expected that individual vehicles or caravans will contain toilets (or this facility will not be used by those who don't) as the Shire does not provide toilet facilities at a road reserve or 'road side rest area' and the regulations do not stipulate that the individual will need to show that they have toilet facilities in order to stop overnight. There are no bins as this encourages people to dump household waste and other waste resulting in overflowing bins. People are encouraged to keep all waste with them, which if endorsed by Council can be encouraged through signage. The Shire has recently put up signage which display "No fires allowed" to ensure fires are not lit at this road reserve area and the Shire's rangers are authorised to issue infringements to anyone who is caught lighting a fire.
	As previously stated we already have people climbing our fences to take photos with our cattle ruining the fences and upsetting our cows, this risk would increase. The school bus stops here for pickup and dropping off the children, again hardly ideal. I have also been advised that there have been few people asked for their opinion on this proposal, it would affect everybody who travels either of these routes with the increased traffic. Please think carefully before you make this decision.	People entering private property and trespassing should be dealt with by police. However, if endorsed by Council, the Shire can provide signage to surrounding properties indicating that it is private land and no trespassing. Shire officers understand that this location is used for a school bus service. Should Council wish to designate the area as a 'road side rest area', the Shire can liaise with the Public Transport Authority School Buses WA to ensure that any bus stops will not be impeded by users of the 'road side rest area' through appropriate signage. All landowners within the Shire of Chittering with a property on Julimar Road, as well as a 1-kilometre radius from the location have been given the opportunity to make a submission. The total number of properties consulted was 16.
	We ,- Robyn ,Jim Hancock and family own the land on the southern corner of Julimar and Chittering Roads-registered in the company name of Fabil Nominees P/L and have used the property as a country retreat for approximately 37 years. A place to escape city traffic and its various pollutants. The area you talk of as the proposed 24 hour stay was once part of our property and resumed on the excuse of straightening the road-no mention of a possible camp site.We certainly would not be encouraging an increase of overnight stayers -this is what we are trying to avoid-we wish to enjoy the serenity of the countryside. Our accommodation and work area overlooks the area of your proposal and would detract from our envisaged rural retreat The proposed area is currently used as a drop off and pick up point for the school bus and promoting visitors/ vehicles to linger and move in the same area doesn't seem like a good plan to us.Picnickers and overnighters currently use the area discretely-however we currently have an issue with free range dogs disturbing stock as well as visitors entering our property (fence damage)to gain selfies with the cows. Again stock disturbance. We do not see your proposal to encourage and expand on the existing use of the area as a good idea. It implodes on our sanctuary and expands the existing issues. We have no recollection of sighting a ranger in the area being discussed-which we are sure they are kept busy with their normal duties. Will your proposal require more rangers or private services patrolling the area over the 24 hour period..Who will monitor the rules and times? What authority would you have over offenders? Why create conflict? The monitoring and making "safe" has a cost -how much? -and are the ratepayers aware of any increases. Your proposal of	The road reserve will not be able to be designated as a caravan park or camp site as it does not comply with the requirements of such under the *Caravan Parks and Camping Ground Regulations 1997* to function as either. The *Caravan Parks and Camping Ground Regulations 1997* allow for a person to camp in a caravan or other vehicle for not more than 24 hours on a 'road side rest area'. Which if endorsed by Council, this road reserve will be designated as a 'road side rest area'. Shire officers understand that this location is used for a school bus service. Should Council wish to designate the area as a 'road side rest area', the Shire can liaise with the Public Transport Authority School Buses WA to ensure that any bus stops will not be impeded by users of the 'road side rest area' through appropriate signage. There are no restrictions as to who can stop and use the road reserve and available tables. There is also an information board with the Shire of Chittering region map. All landowners within the Shire of Chittering with a property on Julimar Road, as well as a 1-kilometre radius from the location have been given the opportunity to make a submission. The total number of properties consulted was 16. There are no changes required to be made to the area, which means only a minimal cost would be required to erect signage. No bins are available as this encourages people to dumb household waste and other waste resulting in overflowing bins. People are advised that there are no bins provided and encouraged to keep all waste with them through signage which is available at the site. The Shire has recently put up signage which display "No fires allowed" to ensure fires are not lit at this road reserve area.

	allowed overnighters includes trucks - where is this heading? Then there is the BIG one - creating a possible fire hazard- overnighters love camp fires. A lot of visitors do not comprehend fire bans and fire risk. Has the proposing person (s) of this 24 hour stay idea experienced a bush fire ? How is this leading to a safe area for any of us? Again , statistics will show you it has happened in the past. The Corner of Julimar and Chittering Roads is a designated control /mustering point when bush fires occur -there is an emergency water tank on the location. By encouraging overnighters and resters in the area ,and in times of emergency they will be an obstacle and another issue to sort. Which leads us to -who is proposing the idea in question? Your correspondence quotes creating a "safe" area-just how are you going to make it safe and from what? Do you propose to provide rubbish bins ? This has failed in the past. The timing of your request for input is questionable-over a holiday period when there is a probability of landholders being absent. Then, the few you have requested input from is questionable-immediately adjacent land holders include- one in poor health due to age -two absentee landholders-and ourselves. There is an increasing amount of commuters using Julimar Road-all in a hurry-your proposal is encouraging wandering resting people near high speed traffic. Motor cyclists are renowned for using Julimar Road for thrill seeking -speeds well in excess of the limit. Statistics will show you the number of deaths and serious accidents that have occurred on that road- all speed related. Surely road safety would need to sanctify your proposal. Would it not be a consideration to encourage visitors to enter Bindoon and its existing facilities?	Rangers patrol around the Shire regularly and always take not of what is happening at the proposed location while passing by. No additional rangers or resources will be required as this location is already being patrolled. Creating a safe stop for motorists passing through the Shire is used in way to ensure that there is a safe and secluded area for motorists who are fatigued or requiring a break to stop and rest, where they are not a risk to other motorists on the road. The rest area will be for <u>any</u> road user in a vehicle who are fatigued and requires a break from driving, to be in a location where they can rest and recover before continuing their journey. Advertising was not required to designate the area as a 'road side rest area' and was done to get feedback from the community and increase transparency. The urgency and timing was in response to an increase in illegal camping which has to be addressed, but before 'No camping" signage is erected at hotspots, there is an opportunity for Council to decide whether or not they would like to have a designated 'road side rest area', to offer an alternative. The comments about the water tank is assumed to be in relation to the road reserve on the southern side of the Julimar Road and is not being considered for designation as a 'road side rest area'. The area referred to by the submitter is not a formal designated control/mustering point for bushfires. It is road reserve, which has a water tank for emergency services to utilise when needed is not being considered for designation as a 'road side rest area'. The Shire's Technical Services Department have reviewed the road safety aspects of the proposal and do not consider the movement of caravan/camper vehicles entering and egressing the site, to be unsafe.
Rob Millsteed	Thank you for advising of the proposed 24-hour rest area Before we make further comment, can you advise why we need a 24 -hour rest area?	The proposal is to designate a road side rest area is in response to an increase in illegal camping around the Shire of Chittering, and is an option to consider to provide travellers an opportunity to stay in the Shire for an overnight stop.
	Can I make a time to meet you regarding the proposed 24-hour rest area? I don't seem to be getting the information I need via email Thursday or Friday this week would be good Please suggest a time	There was a meeting with the Principal Environmental Health Officer, during which the submitter was able to ask questions.
	Can you confirm two matters that I understood you to tell me when we met? My understanding of what you said was that the proposed rest area, corner Chittering Road and Julimar Road is NOT gazetted for any use or purpose at all at the present time. Can you confirm? The original email sent to me on 18 December 2025 signed by Jake Whistler says "Please note that the 24-hour rest area is not intended to function as a camping ground or caravan park. The facility will be restricted to vehicle parking and resting area only, with a maximum stay of 24 consecutive hours. Traditional camping activities, such as camping or swags, will not be permitted. However, rooftop tents (considered part of the vehicle) will be allowed" Can you please confirm that caravans, camper trailers and mobile homes as well as tents and swags will NOT be able to stay overnight?	The proposed area is a road reserve. Using a 'road side rest area' requires campers to be in a vehicle, therefore caravans, camping trailers, mobile homes and rooftop tents will be allowed to use a 'road side rest area', but tents and swags would not be permitted.
	I would like to make comment on the proposed 24-hour rest area, corner Chittering Road and Julimar Road While I believe comments should have been in by 13th January 2025, I was advised that late comments would be accepted. (although this is a bit later than I thought) I am grateful for this as the period from the 18th of December to the 13th of January was not the best time to be finding information with most government organisations closed over the Christmas break.	Advertising was not technically required as any road reserve can be designated as a 'road side rest area' by the Local Government. The reason to advertise was to ensure transparency and to give surrounding landowners an opportunity to comment. The length of advertising took into consideration the holiday period. This area cannot be a caravan park as it does not comply with the requirement set out in the *Caravan Parks and Camping Ground Regulations 1997* which requires a lot of additional facilities such as laundry, toilet and kitchen facilities. A 'road side rest area' is a short stop allowing travellers to have a planned overnight stop or a safe stopping area to have a break while travelling. A caravan park is different as it allows for longer stays and allow recreational activities such as setting up camp around the vehicle which is not allowed at a 'road side rest area'.

	When I try to find more information regarding the proposal, I have found the information I obtain confusing and contradictory . For example, the original email sent out on the 18th of December 2025 stated that "the area is not intended to function as a caravan park", but I believe that a 24-hour rest area allows caravans to park there for 24 hours If this area is designated as a 24-hour stop over there are several responsibilities that come with it Sanitation—While it is advised that Djidy- Djidy Ridge is up the road, can anyone really believe that people will get in their car and drive to those facilities for urgent and overnight requirements? Maintenance—Extra work will need to be done by the Shire. Picking up of rubbish and toilet soil at least twice a week. Mowing of grass 3 times in a year. Grading of hardstand twice a year. Signage and maintaining of signs. Cleaning of tables and benches. Will $10,000.00-to $20,000.00 cover the cost? The area is used as a school bus stop. During the busy times of the year, it is difficult for the bus to find space to enter and park in the area To enter back onto Julimar Road is always dangerous, especially with increased truck activity from the mine site up the road Most weekends during spring and at other times, large groups of people picnic on the grass under the trees. On at least 3 occasions in the last year, because of the lack of space on the grass at the proposed area they have entered our property and put down their picnic rugs. I have observed, for similar reasons, they have also entered other properties I see no advantage to change this area to a 24-hour rest area from what it now is (In fact, I cannot find out what the area now is) I believe that stopovers should not be encouraged. Truly if anyone needs to stop, they will do so either here or some other place The Shire should immediately remove the area as a camping area on signs and on internet sites including the Shires own sites Staying at the transit park at the oval should be encouraged. I believe that a caravan park is going to be set up at the Bike Park I hope the above comments will help with the decision	The *Regulations* do not require a 'road side rest area' to have toilet facilities available. The area is currently being maintained by the Shire for its current day use. There will be no need for additional maintenance to the area. Shire officers understand that this location is used for a school bus service. Should Council wish to designate the area as a 'road side rest area', the Shire can liaise with the Public Transport Authority School Buses WA to ensure that any bus stops will not be impeded by users of the 'road side rest area' through appropriate signage. There will only be minimal costs for signage required if the project is endorsed by Council. The Shire's Technical Services Department have review the road safety aspects of the proposal and do not consider the movement of caravan/camper vehicles entering and egressing the site, to be unsafe. Trespassing is a police matter. However, if the proposal is endorsed by council then additional signage can be provided to surrounding landowners indicating that it is private property. Noted. The area is no longer advertised as a free camping site on any Shire websites or signage.
Geoffrey Lilburne	Dear Shire I wish to request right to comment on a proposal. I was away over Christmas/January and missed the time for comment on proposed Truck Stop. I hope my comment will still be accepted. I wish to oppose the proposal to open a Truck Stop on the corner of Chittering and Julimar roads. To make this a Truck Stop will signal to the public that overnight camping on this sight is acceptable. This will attract many campers, caravaners etc. There are no facilities such as	The submitted was afforded additional time to present a submission to the Shire. The proposal is for a 'road side rest area', not a truck stop. The proposal is for the designation of a 'road side rest area' within Shire of Chittering managed road reserve. This proposal is considered under the *Caravan Park and Camping Grounds Regulations 1997* and is not being considered under the Shire's Local Planning Scheme.

	toilets, fire places etc and will lead to the degradation of the site. As one who farms in the area, I cannot accept this change. Already planning rules require rhat the rural quality of this area be maintained, and this proposal contravenes that planning rule. Please strike this proposal down.	

*Note: Comments are as per original submission received by the Shire.


Advertising Map
Lewis Rd
Rd
Chittering
Julimar Rd
Shire of Chittering
Shire of Toodyay
Map Legend
Rob Millsteed
John Watson
Robyn & Jim Hancock
Nick Deathridge
Geoffrey Lilburne
Location of potential road side rest area
Properties advertised to
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