COVER PAGE

Shire of Manjimup

Local Planning Scheme No. 4 (LPS4)

Amendment No. 34

Summary of Amendment Details

A Scheme Amendment to reclassify a portion of Lot 101 Demiris Drive, Jardee from Priority Agriculture to Rural Residential Area 34 (RR34) so as to amend Schedule 2 of the Scheme and introduce special provisions guiding future subdivision and development of the site.

FORM 2A

Planning and Development Act 2005

RESOLUTION TO ADOPT AMENDMENT TO LOCAL PLANNING SCHEME

Shire of Manjimup Local Planning Scheme No. 4 (LPS4)
[Amendment Number 34]

Resolved that the Local Government pursuant to section 75 of the *Planning and Development Act* 2005, amend the above Local Planning Scheme by:

1. Classifying a portion of Lot 101 Demiris Drive, Jardee as Rural Residential RR34;

2.0. Inserting the specified land and related special provisions within Schedule 2 of the Scheme Text;

(i) The minimum lot area shall be 1 hectare.

3.0. Amending the Scheme Maps accordingly.

The amendment is complex under the provisions of the *Planning and Development (Local Planning Schemes) Regulations* 2015 for the following reason(s):

The subject land is identified in the 2003 – 2013 Local Planning Strategy as Priority Agriculture. The proponent has demonstrated through a technical assessment that the site is not suitable to support agricultural uses and is more suitable to provide a rounding out of the surrounding rural residential area. As Council has considered and endorsed the draft Local Planning Strategy 2040, it is acknowledged that the draft document reflects the rezoning of this site to the Rural Residential zone.

Dated this 28 day of October 2025

(Chief Executive Officer)

AMENDMENT REPORT

SCHEME AMENDMENT



TBB PLANNING

Scheme Amendment Request Report

Lot 101 (No. 26) Demiris Drive, Jardee

Prepared for [redacted]
Prepared by TBB Planning
April 2026

Document Information

Scheme Amendment Request Report

Site Lot 101 (No. 26) Demiris Drive, Jardee

17/056

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Acknowledgement of country



We respectfully acknowledge the Whadjuk people of the Noongar nation, as the traditional custodians of the land on which we live and work, and recognise their continuing connection.

We pay our respects to the Elders past, present and emerging for they hold the memories, the traditions, the culture and hopes that, through meaningful connection, we aim to apply to the design and planning of communities now and in the future.

Doc ID: 17~056 Lot 101 Demiris Dr Scheme Amendment 2.0

Revision	Status	Author	Approved by	Date Issued
0	Draft		R. Chapman	December 2021
1	Draft	J. Fitzgerald & M. Cox	R. Chapman	25 July 2025
2	Final	J. Fitzgerald & M. Cox	R. Chapman	12 August 2025
3	Final	J. Fitzgerald	J. Fitzgerald	26 September 2025
4	Final	P. Needham	P. Needham	16 April 2026

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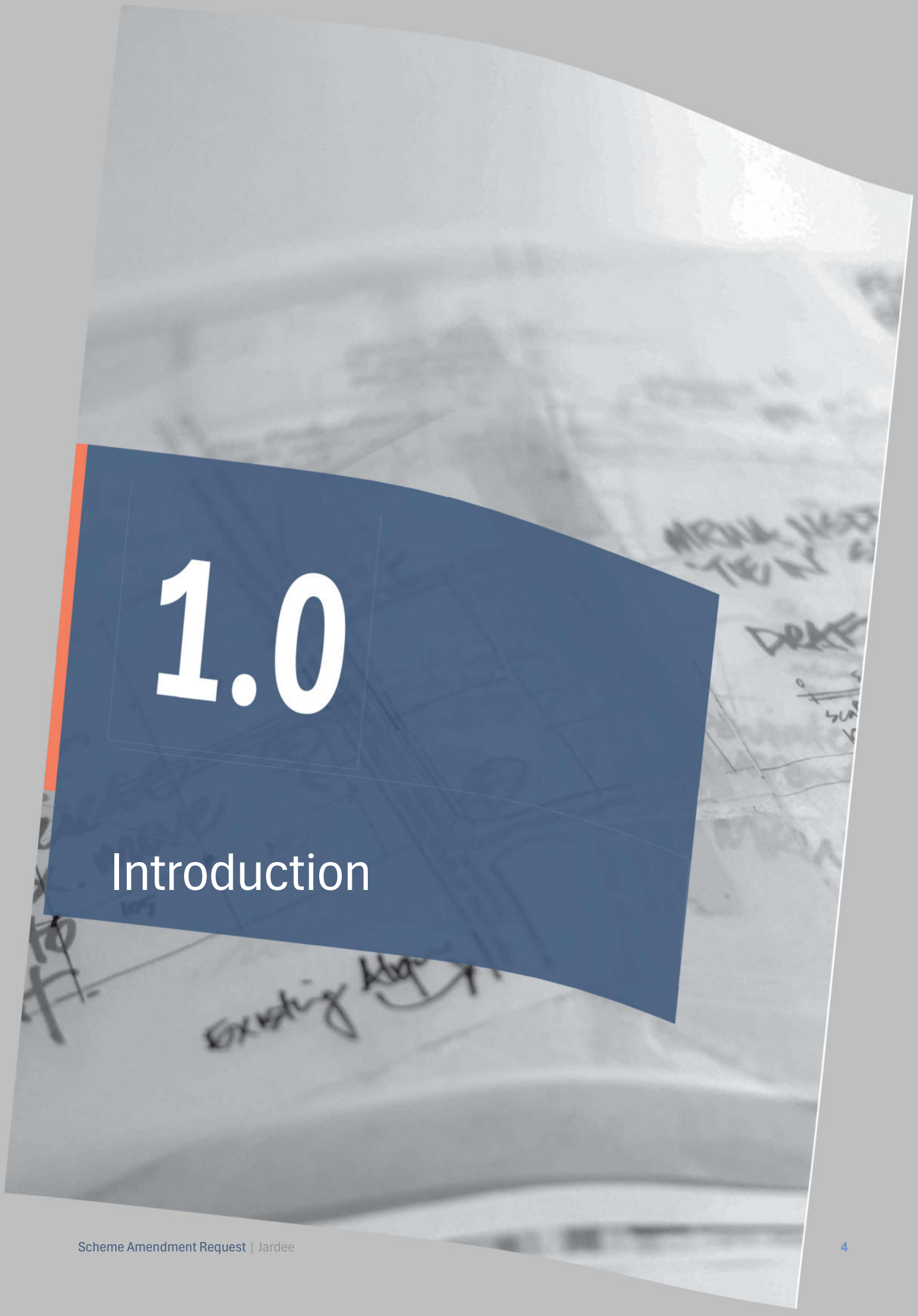
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1.0

Introduction

1.0 Introduction

1.1 Request for Amendment

This Scheme Amendment report has been prepared in relation to Shire of Manjimup (**Shire**) Local Planning Scheme No. 4 (**LPS4**) on behalf of the landowner of Lot 101 (No. 26) Demiris Drive, Jardee (the **subject site**). The purpose of this report is to request a portion of Lot 101, being approximately 6.5 hectares in area (**subject site**), be rezoned from Priority Agriculture to Rural Residential.

This report contains the justification for the proposed Amendment and demonstrates the suitability of the land for rural residential development in accordance with the provisions of LPS4. To support this Request, the following technical investigations have been undertaken:

- TBB Planning (Town Planning and Urban Design);
- Coterra (Environmental Summary Report – **Appendix A**);
- West Soil & Water (Site and Soil Evaluation - **Appendix B**);
- Bushfire Safety Consulting (Bushfire Management Plan – **Appendix C**);
- Bushfire Prone Planning (Bushfire Management Plan Addendum – **Appendix C**).

Note that, in granting approval to advertise the amendment, the WAPC required modifications, most notably a reduction in area of the site proposed to be rezoned, and the removal of references to a Development Concept Plan.

The supporting technical investigations relate to the original proposal. As that original proposal involved rezoning of a larger area, those investigations still provide a sound basis for the amendment, and as such there is no need to update the investigations.

Upon the conclusion of the amendment process, a subsequent application for subdivision will need to be lodged. Technical reports directly related to that application will be provided in support of that application, and assessed by the WAPC, having received advice from the Shire and other relevant State agencies as part of the assessment process.

1.2 Background

The purpose of this Request is to facilitate a rural residential subdivision and development of the subject site. The landowner intends to complete the adjoining Bella Vista Estate by subdividing the subject site into multiple lots approximately 1 hectare in area.

A Request was made in 2006 to amend LPS4 to facilitate subdivision of the land. However, the Western Australian Planning Commission (**WAPC**) refused to support the Request due to the identification of the subject site in the Shire of Manjimup Local Planning Strategy as Priority Agriculture.

A subsequent Request was lodged in December 2021 with additional technical reporting to demonstrate why the subject site cannot support priority agriculture and the suitability of the land to be developed for rural residential purposes. The Shire in turn provided feedback to this Request in February 2022. This report addresses the Shire's feedback of February 2022.

Having received an updated Scheme Amendment Request the Shire, at Council's Ordinary Meeting of 28 October 2025, resolved to support the amendment, and to seek WAPC consent to advertise the amendment. The WAPC subsequently granted approval to advertise the amendment, subject to modifications as follows –

No.	Modification
1.	Delete proposed special provisions 1, 3 and 4
2.	Modify the Proposed Zoning Map to remove the southern portion (plantation area shown on aerial photography) from the amendment.
3.	Modify the Amendment document and appendices to: • Remove reference to a Development Concept Plan / Concept Plan throughout (inclusive of figure 7 and 8). • Remove reference to "subdivision into nine lots" (or similar) throughout. • Revise references to amendment proposal and rezoning area to be consistent with modifications 1 and 2. • On page 9, sentence 3 of amendment document, replace "1.2 ha" with "3.5 ha".
4.	Any other minor administrative modifications as required.

This document incorporates changes reflective of the WAPC modifications set out above.



2.0

Site Details

2.0 Site Details

2.1 Lot Details and Landownership

The subject site is approximately 6.5 hectares in area, comprising the north-eastern portion of Lot 101 as shown in red in **Figure 1** below. The lot details and landownership of Lot 101 are described in **Table 1** below.

Table 1 – Lot Details

Lot	Deposited Plan	Volume	Folio	Total Lot Area	Registered Proprietor
9029	428480	4065	134	44.2069 ha	

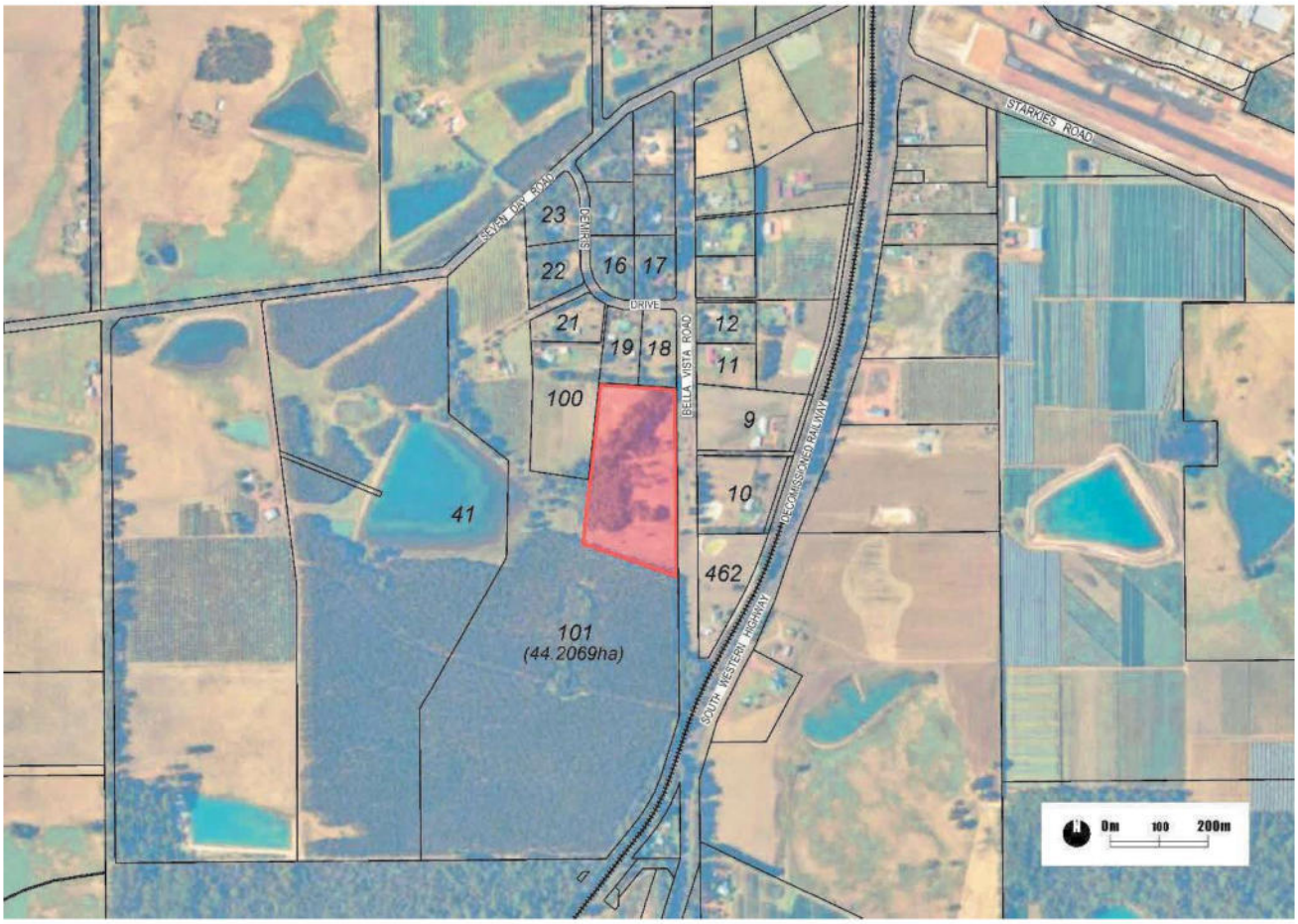


Figure 1 - Subject Site

2.1.1 Existing Land Use and Development

The subject site is bound by rural residential properties to the north and north-east, Bella Vista Road to the east, and a Blue Gum tree plantation to the south and west, situated in the balance of Lot 101.

The South Western Highway is located to the east of the site, which provides a connection to the Manjimup Town Centre, along with several other major towns in the wider South West Region. A decommissioned railway line runs adjacent to the South Western Highway, with an existing at-level crossing over the railway line to the south of the site.

The land located to the west of Lot 101 has been established primarily as a Blue Gum plantation and also contains a dam. A portion of the Blue Gum tree plantation is also situated within the southern portion of the subject site, within Lot 101. The Blue Gum tree plantation is currently in the process of being harvested and will be fully removed by end of May 2026.

The balance of Lot 101 also contains a dwelling located in the north-western corner. The balance of Lot 101 has been excluded from the subject site and amendment area. The remainder of the subject site is generally cleared, with some remnant vegetation. The subject site gently slopes towards the dam located west of the land and has high points which offer expansive views of the distant landscape.

Photographs of features surrounding the subject site are provided in **Figures 2-5.**



Figure 2 Bella Vista Road



Figure 3 Entrance from Seven Day Road to the existing Bella Vista Estate

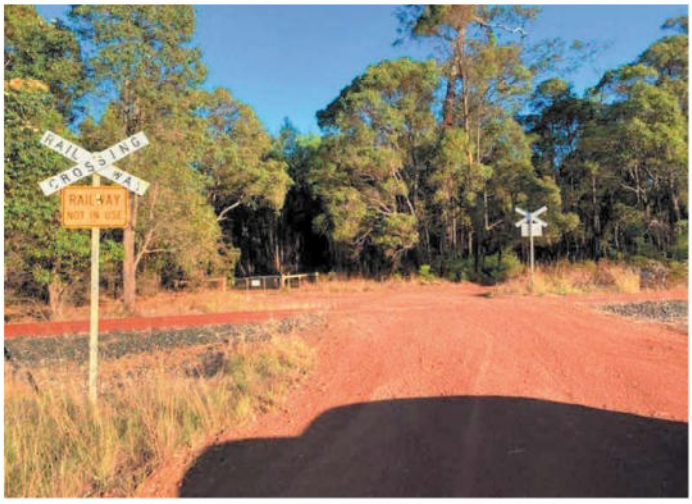


Figure 4 Railway Crossing south of subject site



Figure 5 Dam located to the west of the subject site

2.1.2 Surrounding Context

The rural residential properties to the north and north-west of the subject site form the Bella Vista Estate which was established in 1993. The homes in the Bella Vista Estate have been constructed to a high standard, are well vegetated and well maintained, enhancing the amenity of the surrounding Manjimup locality. The lots range in area from 1 to 3.5 ha.

The subject site is conveniently located 4 km south-west of the Manjimup town centre, and is less than 5 km to a variety of existing local and regional community facilities including (refer to **Figure 6** below):

- East Manjimup Primary School (3.8km);
- Manjimup Primary School (4.5km);
- Manjimup Senior High School (4.5km);
- Kearnan College (3.7km);
- Manjimup Airport (1.4km);
- Warren District Hospital (4.3km);
- Manjimup Regional AquaCentre (4.3km); and
- a variety of shops, restaurants and cafes.

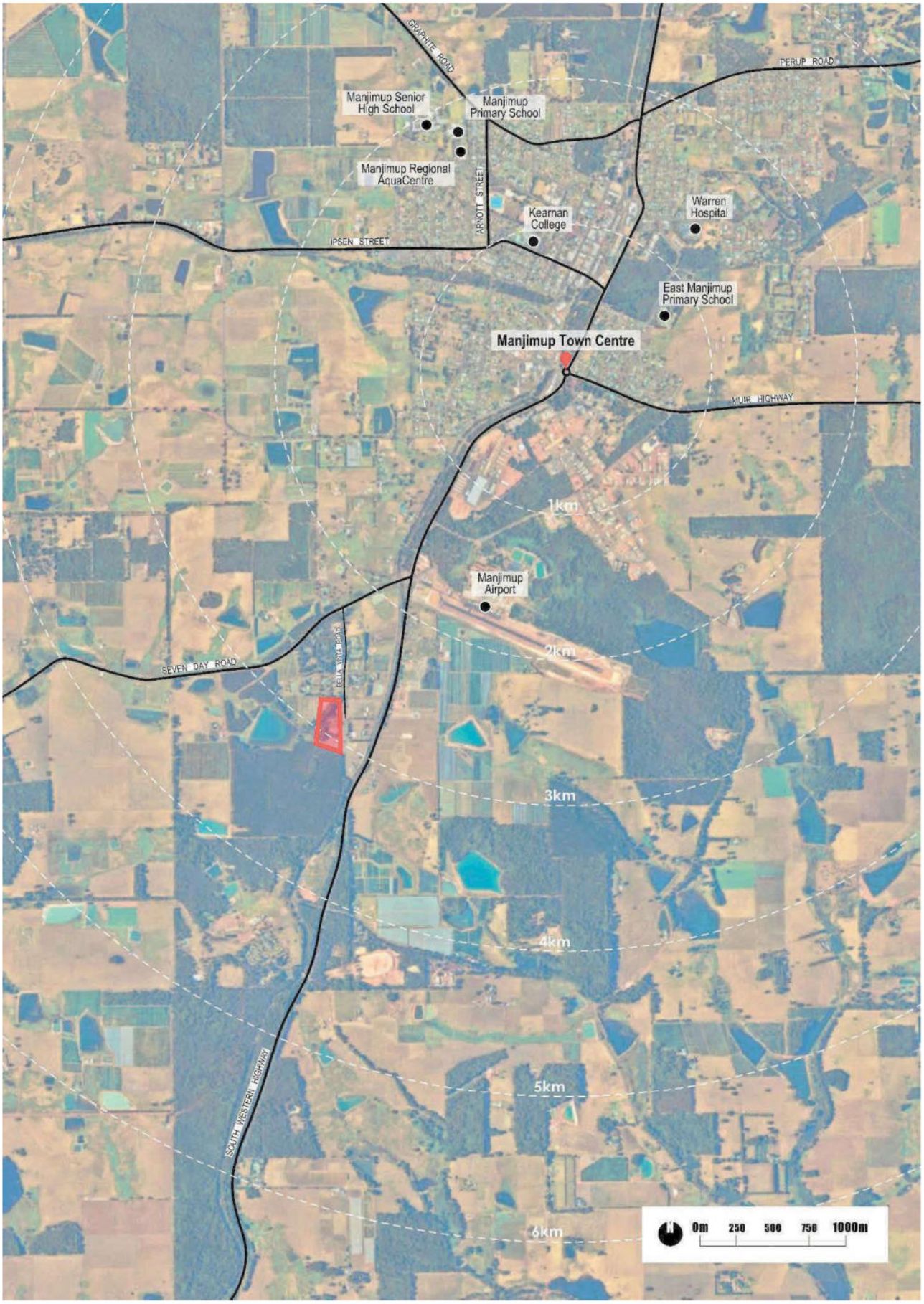


Figure 6 - Context Plan

3.0

Site Conditions

3.0 Site Conditions

3.1 Environment

An Environmental Summary Report has been prepared by Coterra Environment to support the Scheme Amendment Request. The Report is contained in **Appendix A** and summarised below.

3.1.1 Topography, Landform & Soils

Topography at the site ranges from approximately 270m Australian Height Datum (AHD) in the north west, to approximately 290m AHD in the south east.

The site is in both the Crowea and Pemberton soil units. The soil profile is generally identified as comprising of sandy brown topsoil overlying Gravels/Coarse Sand loam, which was often underlain by rock laterite in central areas of the site or clay loams. The soil is well-drained, and the acid sulfate soil risk on the site is classified as C4 – Extremely Low Probability / Very Low Confidence.

3.1.2 Hydrology

3.1.2.1 Groundwater

Depth to groundwater across the site was assessed as a part of a Site and Soil Evaluation undertaken for the site by West Soil and Water (2024), refer **Appendix B**. Groundwater was measured as being greater than 6 m below ground level in the low-lying northern portion of the site.

Nearby groundwater bores listed on the DWER information reporting tool do not provide significant depth to groundwater information. However, drill depth of bores in the area are noted to range from 18 to 25 m below ground level (West Soil and Water 2024).

The site is not located within a proclaimed groundwater area under the Rights in Water and Irrigation Act 1914 (RIWI Act), and therefore a license is not required to take groundwater from the site, under the RIWI Act.

3.1.2.2 Surface Water and Wetlands

No perennial or seasonal surface water features are present on site. It should be noted that all surface water resources within and in proximity to the site, including for agricultural use, are fully allocated (DWER 2023). Surface water flows are anticipated to follow topographic contours in a westerly direction towards the large dam located on Lot 41.

There are no mapped wetlands within or in proximity to the site (Landgate 2023). Farm dams are located to the west (generally >100m) and east (approximately 50m) of the site. No dams are present onsite.

The site is located within the Lefroy Brook Catchment Area which is a surface water Public Drinking Water Supply Area (PDWSA). No priority level is assigned to this area (West Soil and Water, 2024).

3.1.3 Vegetation and Flora

3.1.3.1 Pre-European Vegetation

Pre-European vegetation within Western Australia has been mapped at a state level by Beard (1990) as vegetation system associations, and by Heddle et al (1980) across the swan coastal plain and south west as vegetation complexes.

One vegetation system association has been mapped within the site, being Nornalup 3. This vegetation is described as a medium forest of *Eucalyptus marginata* (Jarrah) and *Corymbia calophylla* (Marri). Approximately 148,209 ha (89.35 %) remains of this vegetation within Western Australia, and approximately 35,500 ha (94.06%) remains within the Shire of Manjimup.

Two vegetation complexes have been mapped within the site – Pemberton Complex (PM1) and Crowea Complex (Cry). The EPA uses vegetation complexes as the bases for regional representation of biodiversity and has an overall objective to seek retention of at least 30 % of the pre-clearing extent of each ecological community (EPA 2015). Both vegetation complexes are considered to have extents remaining well above the targeted 30% threshold.

3.1.3.2 Conservation Significant Flora and Vegetation

A desktop assessment was undertaken to determine the potential for conservation significant flora and vegetation to occur within the site. Based on a search of the Department of Biodiversity and Conservation and Attraction's (DBCA) Naturemap database, DBCA's Threatened Ecological Communities data layer (DBCA-038), and the Commonwealth's Protected Matters Search Tool, four threatened flora, six priority flora, and no conservation significant ecological communities were identified to potentially occur within 10 km of the site boundary. Of these species, none were considered likely to occur within the site, based on the known site conditions, and these species' habitat requirements.

3.1.3.3 Site Inspection

As part of the development of a Bushfire Management Plan (BMP; Bushfire Safety Consulting 2023), an inspection was undertaken of the site's native vegetation in April 2020.

Most of the site consists of completely cleared pastures, with isolated stands of degraded vegetation in the north and south west of the site which cover a combined area of approximately 3.3ha. Remnant native vegetation in the north of the site was identified as comprising a mature and regrowth open forest dominated by rough-barked eucalypts (namely Jarrah and Marri), with little to no understorey present. Vegetation in the south west of the site was identified as being an open forest of native, smooth-barked eucalypts (namely Eucalyptus diversicolor; Karri). No native understorey was identified in this location.

3.1.3.4 Fauna and Habitat

A desktop assessment was undertaken to determine the potential for conservation significant fauna and fauna habitat to occur within the site. Based on a search of the DBCA's NatureMap database and the Commonwealth's Protected Matters Search Tool, eight threatened, 11 specially protected (including migratory), and five priority fauna species were identified as potentially occurring within 10 km of the site boundary. Based on an assessment of habitat requirements, the following conservation significant species were considered to potentially occur within the site:

- *Zanda baudinii* (Baudin's Black Cockatoo) – listed as Endangered under State and Commonwealth legislation
- *Zanda latirostris* (Carnaby's Black Cockatoo) – listed as Endangered under State and Commonwealth legislation
- *Calyptorhynchus banksia naso* (Forest Red-tailed Black Cockatoo) – listed as Vulnerable under State and Commonwealth legislation.

It should be noted that there are no records of the above fauna occurring within the site boundary (DBCA 2022).

Based on the absence of wetland and intact understorey vegetation, there is not considered to be any suitable habitat for Western Ringtail Possums (WRP; *Pseudocheirus occidentalis*) within the site. However, it is noted that the planting of suitable food trees and establishment of water sources in rural residential gardens has the potential to create potentially suitable habitat for the species.

Recognising the paucity of biodiversity within the site boundary, the isolation of the two native vegetation stands, the near absence of understorey vegetation and the limited extent of this vegetation within the site boundary (approximately 3.3ha), the site is considered to have limited value as habitat for the above species. There are no known black cockatoo roosting sites within or in proximity to the site.

3.1.3.5 Conservation Areas and Ecological Linkages

The site is located within the area subject to the South West Regional Ecological linkages project, which identifies patches of native vegetation which serve as stepping stones for ecological processes across the broader landscape (WALGA 2009). No ecological linkages are located within or adjacent to the site. Two ecological linkages run parallel with South Western Highway, approximately 3.2 km and 2.5 km west and east of the site, respectively.

The Shire of Manjimup's Natural Environment Strategy (2008) identifies Natural Resource Assets across the Shire, which are to be protected and enhanced. While the report does not identify specific sites which may represent Natural Resource Assets, these are defined as natural resources such as biodiversity, agricultural land, and remnant vegetation. Noting the degraded nature of remnant vegetation on-site and the unsuitability of the land for agricultural purposes, the site is not considered to be a Natural Resource Asset.

The site does not contain any Environmentally Sensitive Areas (ESAs), as mapped by DWER (Landgate 2023).

3.2 Heritage

3.2.1 Aboriginal Heritage

Based on a search of the Department of Planning, Lands and Heritage (DPLH) Aboriginal Heritage Inquiry System, there are no known Registered Sites of other Aboriginal Heritage Places within the site boundary.

3.2.2 Other Heritage

A review of the State Heritage Office's InHerit database and the Shire of Manjimup Municipal Heritage Inventory (SoM, 2008) identified no non-aboriginal heritage places within or in proximity to the site.

3.3 Potential Impacts and Environmental Response

3.3.1 Vegetation and Flora

Implementation of the proposed development will necessitate the complete and partial clearing of approximately 1.8 ha of degraded, native vegetation.

Potential building envelopes as identified in the technical investigations indicate that buildings can be sited within the proposed development to minimise the extent of clearing required for the purpose of bushfire hazard mitigation. For example, APZs buffering from proposed building envelopes can be designed to overlap, where possible. Additionally, fire service access routes can be strategically located to correlate to the location of firebreaks as required under the Shire of Manjimup Firebreak and Fuel Hazard Reduction Notice 2022/2023, thereby limiting the duplication of clearing in these areas also (Bushfire Safety Consulting 2023).

The majority (approximately 65%) of clearing necessitated by the proposed development will be undertaken as partial clearing required to establish and maintain APZs around building envelopes. This clearing need only be undertaken to the extent required under Schedule 1 of the Guidelines for Planning in Bushfire Prone Areas (WAPC 2021): Standards for Asset Protection Zones. This schedule allows for the retention of 15% canopy cover for trees greater than 6m in height.

Vegetation to be cleared comprises isolated patches of degraded forest, with little to no understorey remaining. On this basis, impacts to flora and vegetation associated with the proposed development are not anticipated to be significant.

3.3.2 Fauna and Habitat

The proposed development will result in the complete and partial clearing of approximately 1.8 ha of potential habitat for native fauna, including black cockatoos.

Vegetation within the site is largely devoid of understory, thereby limiting the vegetation's potential as habitat for native terrestrial fauna. Faunal movement to and within the site is limited by the vegetation's relative isolation. The vegetation exists as two isolated patches, separated from other stands of vegetation by either pastures or blue-gum plantation. While this habitat may have function as an ecological stepping stone between larger stands of higher quality habitat this value is anticipated to be retained post-development.

It should also be recognised that implementation of the proposed development may enhance habitat value for native fauna. For example, the installation of plants along Bella Vista Road that are known black cockatoo foraging species will be considered at subdivision, and the establishment of gardens and potentially new water sources may provide habitat for a broader array of fauna species.

3.4 Land Capability

3.4.1 Priority Agricultural Land

The site is currently zoned Priority Agriculture under LSP4, the purpose of which is to:

'*...provide for the sustainable use of high quality agricultural land, particularly where water resources exist, preserving existing agricultural production and allowing new agricultural production by securing suitable land and water resources.*'

To inform a prospective rezoning of the site and surrounding area to enable rural residential development, a dedicated Land Capability Assessment was undertaken of part of Lot 42 (now Lot 101), refer **Appendix A**. The Land Capability Assessment was undertaken to assess the potential for the land to support both agricultural activities and rural residential development with on-site effluent disposal.

Considering the site's extent, existing land use, the definition of prime agricultural land, and the applicability of relevant legislation, the assessment concluded that the site does not fulfil the requirements to be considered prime agricultural land, or as having a high priority for agriculture.

Since the site-specific Land Capability Assessment was undertaken, regional land capability mapping has been undertaken by the Department of Primary Industries and Regional Development (DPIRD 2023), based on soil landscapes. The mapping categorises land across the south west of Australia by its potential to support five broad land uses, including annual horticulture, dryland cropping, grazing, perennial horticulture, and vineyards. The land's capability to support each land use within the soil units mapped on-site is presented in **Appendix A**.

DPIRD mapping indicates that for the Crowea soil unit, >70% of the land has a moderate to very high capability for annual horticulture, dryland cropping and grazing. It is important to note however that this soil unit occupies only 78% of the site, and when currently vegetated land is also considered, only approximately 1.97 ha of the site could be considered to align with this classification. It is considered unlikely that 1.97 ha of land is of a sufficient extent to support economically viable agricultural activity, at this location.

DPIRD states that land capability and land quality mapping are only a starting point for assessing land, and that due to the scale of mapping, on-ground assessments are needed to identify characteristics of the parcels of land (DPIRD 2022). Individual areas may perform better or worse than the land capability and land quality maps suggest, depending on seasons, soils and management (DPRID 2022). Further, water (including quality and availability) is not considered as part of the assessment (DPIRD 2023).

No perennial or seasonal surface water features are present on site. It should be noted that all surface water resources within and in proximity to the site, including for agricultural use, are fully allocated (DWER 2023). No surface water is available to support agricultural activities within the site.

Further site-specific information, including information collected as a part of an on-ground assessment, is available within the Site and Soil Evaluation report prepared by West Soil and Water, refer **Appendix B**.

3.4.2 Rural Residential Development

The potential for the site to support rural residential development was considered as a part of a Land Capability Assessment undertaken by Ashley Prout & Associates (refer **Appendix A**). In considering erosion risk, ease of excavation, the potential for water logging and flooding, slope instability, and salinity, the assessment determined that the site generally has a low risk in supporting house and road construction.

Most recently, a Site and Soil Evaluation was undertaken by West Soil and Water (refer **Appendix B**) to determine the ability for the site to support rural residential development. The assessment was undertaken based on the risk framework of AS/NZ 1547 On-site Domestic Wastewater Management and with reference to the Government Sewerage Policy (DPLH 2019) and focused on the site's suitability for onsite wastewater management.

Overall, it was concluded that the site can receive the estimated volumes of wastewater associated with rural residential development, and that the site can accommodate onsite sewage disposal with no buffers breached. Other key findings include:

- Minimum groundwater depth was recorded as 6 meters below ground level – much greater than the minimum 2 m distance stipulated within the Government Sewerage Policy
- Phosphorus retention and absorption is high, which increases the potential for additional nutrients to be absorbed prior to infiltrating to groundwater
- Sufficient space is available for treated sewage application within each proposed lot, determined as a maximum required area of 257m^2 utilising secondary treatment.

Most notably, rural residential development exists immediately north of the site, and to the east of the site opposite Bella Vista Road. These land uses have successfully been implemented in areas with near identical environmental conditions, including the same soil types, topography, landscapes, and amenity values. There is no evidence to suggest that the site's use for rural residential purposes would be any less successful than those already implemented in immediate proximity.

3.5 Landscape Assessment

Section 5.36.4.1 of LPS4 requires a landscape assessment to be undertaken of land which a proponent has requested to be rezoned to Rural Residential. The Landscape Assessment is to include an analysis of slopes, vegetation cover, skylines, vistas, stream environs and identifiable natural features.

3.5.1 Slopes

Topography across the site ranges from approximately 270m AHD in the north west, to approximately 290m AHD in the south east. The site slopes gently downhill to the west, towards a large artificial dam located on Lot 41.

A site inspection undertaken to inform the BMP identified these slopes as being no greater than 5 degrees (Bushire Safety Consulting 2023).

3.5.2 Vegetation Cover

Approximately 1.44ha of vegetation will be retained undisturbed with a further 1.19ha to be modified to address bushfire risk management requirements within the site following implementation of the proposed development. Vegetation comprises a mixture of native canopy trees including Marri, Jarrah and

Karri, which is consistent with the bushland environs of the broader Manjimup area. It is anticipated that the paucity of understory vegetation may enable greater use of these vegetated areas by the site's future residents.

The southeast of the site is located on an elevated rise, providing views of reserved vegetation on Lot 6 approximately 500 m to the south, as well as minor patches of native vegetation around the dam to the west and rural residential properties to the north.

3.5.3 Skylines and Vistas

Proposed building envelopes across the site are generally located on the southern and eastern portions of the site, which generally corresponds to a higher topography. Elevated building envelopes will therefore be afforded views through retained stands of native trees, overlooking the large waterbody present on Lot 41.

3.5.4 Stream Environs and Other Natural Features

There are no stream environs or other surface water features within the site. The closest surface water feature is a large dam located on Lot 41, which will provide overlooking views from the proposed residences. Stands of native trees including Marri, Jarrah and Karri will be retained on-site, supporting the natural amenity of the area.

3.6 Site and Soil Evaluation

A Site and Soil Evaluation (SSE) has been prepared in support of this rezoning request and is contained in **Appendix B**.

The SSE found that the site is able to accommodate on-site sewerage treatment and disposal. In particular, the report found:

- Soils on site are classified as maximum Category 4 and have moderate to high levels of infiltration in near-surface soils.
- The use of conventional absorption trenches systems will be preferred at this site, with a 2.0 metre separation distance to groundwater required in a sewerage sensitive area. The use of mounds and careful consideration of sewerage disposal placement may provide additional benefit in some parts of the site.
- Sufficient space is available for treated sewage application for any future lot, determined as a maximum required area of 257m^2 utilising secondary treatment.
- A suitably qualified installer should be utilised for future works.
- The site can receive the proposed volumes of wastewater, and it is considered that the site can accommodate onsite sewage disposal with:
- Secondary treatment, including nutrient removal.
- Appropriate positioning of wastewater disposal areas; and
- Consideration of the use of mounding in some parts of the site.

3.7 Bushfire

A Bushfire Management Plan (**BMP**) has been prepared in support of the rezoning request to facilitate future rural residential development in accordance with the requirements of State Planning Policy 3.7 – Planning in Bushfire Prone Areas and the Guidelines for Planning in Bushfire Prone Areas.

The BMP (refer **Appendix C**) demonstrates that the proposed development intended under the Scheme Amendment, is able to achieve acceptable solutions for all of the bushfire protection criteria, and that each lot envisaged in the BMP can accommodate a dwelling exposed to a rating of BAL-29 or lower. This is based on the implementation of an overlapping Asset

Protection Zone which surrounds the identified building envelopes in the BMP and extends into the blue gum plantation within the subject land. An updated BMP, including a BAL Assessment, will be prepared to support future subdivision and development applications.

A Broader Landscape Assessment (BLA) has been undertaken as an addendum to the BMP, refer **Appendix C**. The BLA determined that the subject site is considered Landscape Type A which in turn demonstrates compliance with the Guidelines for Planning in Bushfire Prone Areas.

3.8 Movement & Access

Access to Lot 101 is currently gained via a 20m-wide battleaxe leg off Demiris Drive. Demiris Drive is classified as an Access Road under Main Road Western Australia's (MRWA) Road Hierarchy and has a speed limit of 50 km/hour. Lot 101 also has access available from the east via Bella Vista Road.

The portion of Lot 101 subject to this Scheme Amendment has frontage to Bella Vista Road. The majority of Bella Vista Road has been constructed as a sealed road and is classified as an Access Road under MRWA's Road Hierarchy with a speed limit of 50 km/hour. Both Demiris Drive and Bella Vista Road feed off Seven Day Road, which is classified as a Local Distributor and has a speed limit of 50 km/hour. The South Western Highway is classified as a Primary Distributor under MRWA's Road Hierarchy and has a speed limit of 90km/hour for the portion of the road adjacent to the subject site.

A southern extension of Bella Vista Road would be required to be constructed by the landowners of the subject site to facilitate access to any future lots created. From the end of the extended portion of Bella Vista Road, an Emergency Access Way (EAW) would extend to the existing level crossing over the railway from Bella Vista Road to the South Western Highway. Support from Main Roads WA, Public Transport Authority and Arc Infrastructure to these access arrangements is included within the BMP prepared in support of this Request.

3.9 Servicing Considerations

Reticulated water, power and telecommunication services are all available to the subject site, having been established as part of the Bella Vista Estate. Alternative Treatment Units (ATUs) are currently used on lots within the Bella Vista Estate adjacent to the subject site, which have proven to be a suitable effluent disposal system for the characteristics of the land.

A SSE has been prepared and is contained in **Appendix B**. The SSE found that the site is able to accommodate on-site sewerage treatment and disposal.



4.0

Planning Framework

4.0 Planning Framework

4.1 Strategic Planning Framework

4.1.1 Warren-Blackwood Rural Strategy (2004)

The State Government Warren-Blackwood Rural Strategy (**WBRS**), published by the WAPC in 2004, provides a planning framework to address the rural land use, land management, agricultural productivity, environmental protection and resource rehabilitation issues in the Warren-Blackwood Region.

The main objective of the WBRS has been to introduce the principles of sustainability and natural resource management in the planning system and to attain an appropriate balance between enhancing productive capacity, protecting the environment and maximising community opportunity.

The WBRS identifies the subject site as Priority Agriculture and includes the site within Planning Unit WR2 – Perup. The objective of the Priority Agriculture land in the WR2 – Perup Planning Unit is to:

> *Generally, promote and facilitate the diversification and intensification of sustainable agricultural production, especially that requiring irrigation waters, but within the Wilgarup River and Upper Lefroy Brook sub-catchments protect the existing high-value land uses and production capabilities.*

The WBRS recommends a minimum lot size of 80 hectares for land within the Priority Agriculture zone. The subject site does not meet this requirement, given it is only 44.2069 hectares. Being a high-level strategic planning document, it is evident that the Strategy's classification of the subject site does not take into consideration the existing land uses, lot sizes and development in this locality.

In regard to rural residential development, the WBRS states:

- Rural-residential estates to be identified as policy areas in local planning strategy or scheme, in response to a demonstrated need.
- Subdivision and development not permitted until land rezoned and structure plan prepared and approved.
- Rural-residential estates to be located in close proximity to an urban centre, but not in or adjoining significant agricultural areas.
- Estate design to show flexibility to protect and enhance significant landscape and environmental features.

The proposed Scheme Amendment will enable the site to be suitability identified in LPS4 in accordance with the requirements of the WBRS. The proposed Scheme Amendment Request represents an extension of the existing Bella Vista Estate and is located less than 4 km from the Manjimup Town Centre. The significant landscape and environmental features will be able to be retained, enhancing the amenity of the locality.

4.1.2 Shire of Manjimup Local Planning Strategy

The Shire of Manjimup Local Planning Strategy was endorsed by the WAPC in August 2003. The Strategy identifies the future land use for the subject site as Priority Agriculture. The key objective of Priority Agriculture land in the Local Planning Strategy is to:

> *Protect Agricultural areas of State/Regional/Local significance by retaining agricultural potential. Prevent the development of uses, which are incompatible with the primary use of Agriculture – both intensive and extensive. Maintain and enhance the environmental attributes of the locality including landscape, vegetation, soils and water resources and water courses and wetland systems.*

The characteristics of the subject site are not suitable to support agricultural uses, as explained in the preceding sections of this Report and as demonstrated in the technical assessments undertaken (refer to appendices). The physical characteristics

of the subject site, its proximity to services, the lack of alternative suitable land and its strategic location all support the rural residential development of the land, which represents a rounding out of the surrounding rural residential area.

Prior to formal consideration of the Scheme Amendment Request, the Shire liaised with Department of Planning, Lands and Heritage (DPLH) in 2020, and confirmed that both the Shire and DPLH officers were prepared to consider the proposed Scheme Amendment as a consolidation of the existing zone.

4.1.2.1 Draft Shire of Manjimup Local Planning Strategy

It is understood the Shire of Manjimup is currently preparing a draft Local Planning Strategy (**draft Strategy**) to replace the existing Local Planning Strategy (2003) and to inform the preparation of a new Local Planning Scheme No. 5.

The Meeting Minutes from the Shire's Ordinary Council Meeting held on 27 May 2025 summarise the current status and progression of the Shire's draft Strategy:

- It is understood that in October 2013, the Shire appointed consultants to review the Local Planning Strategy (2003). A draft was subsequently prepared in 2015, however, due to changes in staffing, the draft Strategy was placed on hold. The contract was formally terminated in 2021.
- While the *Planning and Development (Local Planning Schemes) Regulations 2015* require a formal report of review to be endorsed by Council and submitted to the WAPC, this process was not undertaken at the time. Instead, previous staff had informal discussions with the DPLH, which led to an understanding that *Local Planning Scheme No. 4* could be repealed due to its age.
- The Shire's officers in 2024 identified the need to re-engage external consultancy services to progress the review. A consultant has since been appointed, who completed the gap analysis for the 2015 draft Strategy and developed a project plan for delivery of the final draft Strategy.
- The findings of the gap analysis highlighted several key areas requiring additional research to complete a fully comprehensive Strategy. In order to prevent further delay, Council endorsed the draft Strategy content in its current form and seek support from the WAPC to proceed on this basis with the aim to establish a clear and agreed pathway for finalising both the new Strategy and accompanying new Local Planning Scheme No. 5.
- The elements identified in the gap analysis would form a 'light' version of the draft Strategy. Although not a fully comprehensive document, this version is expected to be sufficient to gain DPLH support to proceed to public advertising and would provide adequate strategic guidance to inform preparation of the new Scheme.
- Timeframes indicate that the 'light' version of the Strategy could be lodged with the WAPC within three to five months from May 2025. This would enable the Shire to advance the preparation of the draft Local Planning Scheme No. 5, with the intention of commencing public advertising before the end of the year.

Given the nature of the proposed Amendment and the ongoing delays to the Shire's draft Strategy and draft Local Planning Scheme No. 5, it is considered that the Amendment can progress ahead of the Shire's updates to its planning framework.

4.2 Other Strategic Plans

4.2.1 Warren Blackwood Sub-Regional Growth Plan 2023

The Warren Blackwood Sub-regional Growth Plan 2023 (**Sub-regional Growth Plan**) recognises a growing demand for rural residential living in the Warren Blackwood sub-region. Many people are seeking a move to regional areas for lifestyle reasons as new technology allows them to maintain digital connectivity with friends, family, work and the global market. Manjimup and surrounds are known for its natural beauty, lifestyle, and liveability, which further supports its rural residential appeal.

The Sub-regional Growth Plan details a 'Priority Initiatives' table with actions and specific projects listed, and associated timelines provided. Under the 'Land' Priority Initiatives, the Sub-regional Growth Plan lists a designated initiative to advocate for a consistent pipeline of residential land to support the short and medium term (1-5 years) population expansion across the region, as shown in **Table 2** below.

Table 2 - Priority Initiative for Land for residential purposes

Initiative	Priority Actions	Specific Projects	Timeline (years)		
			1-3	*3-5*	*5-10*
Land for residential purposes	*Advocate for sufficient residential land in the region to meet current and future population growth.*	• Support the strategic implementation of residential land development through Local Planning Schemes.	✓	✓	
		• Support opportunities to activate 'lazy land'.	✓	✓	

The proposed Scheme Amendment directly supports the specific actions and projects outlined above by providing land for residential development purposes and by activating 'lazy' land that is not suitable for agricultural purposes and already adjoins an existing rural-residential area. Ultimately, the proposal will provide suitable and available land to assist with accommodating population growth, as listed in the Priority Action for the Initiative.

4.2.2 Manjimup SuperTown Growth Plan 2012

The Manjimup SuperTown Growth Plan 2012 (**SuperTown Growth Plan**) was prepared on behalf of the Shire of Manjimup and the South West Development Commission in 2012, to set out the direction for community population expansion for Manjimup. It provides a high-level strategic blueprint to facilitate the continued and sustained growth of Manjimup as a regional centre. Under the SuperTown Growth Plan, the aspirational growth target for the Manjimup Town is to accommodate 11,000 people by 2031, requiring a 3.4% annual increase in the resident population as of 2012. It is being driven by the need to modernise and transform the Town to support long term economic activity, improve the quality of life for existing residents and to attract and retain new residents.

The SuperTown Growth Plan recognises that urban expansion should be directed towards suitable land in an orderly and co-ordinated manner commensurate with the availability or provision of infrastructure. The Plan also encourages both medium and low-density residential development in order to achieve diversity and affordability in housing type and lifestyle choices. Constraints to urban expansion include noise impacts from the Manjimup Airport and access to reticulated water.

The future development of the subject site for rural-residential purposes is consistent with the intent of the SuperTown Growth Plan and in turn, it would satisfy the demand for rural-residential development and to help facilitate Manjimup achieving its growth target by 2031.

4.3 Statutory Planning Framework

4.3.1 Shire of Manjimup Local Planning Scheme No. 4

Under the Shire of Manjimup Local Planning Scheme No. 4 (**LPS4**), the subject site is zoned Priority Agriculture.

Clause 4.4.1 states that the purpose of the Priority Agriculture zone is:

> *To provide for the sustainable use of high-quality agricultural land, particularly where water resources exist, preserving existing agricultural production and allowing for new agricultural production by securing suitable land and water resources.*
>
> *To provide for intensive agricultural and horticultural production, including market gardens, orchards and vineyard enterprises.*

As explained in this Report, the characteristics of the subject site are not suitable to support agricultural uses, consistent with the purpose of the Priority Agriculture zone.

4.3.1.1 Zoning Requirements for Rural Residential Zone

Clause 5.36.4 of LPS4 (Zoning Requirements for Rural Residential) requires that scheme amendment requests for land to be rezoned to Rural Residential are to be accompanied by the information specified under this Clause. **Table 3** below outlines how the proposal meets the supporting information and documentation required by the Clause.

Table 3 - Clause 5.36.4 Assessment

Clause 5.36.4 Requirement		Applicant Response
5.36.4.1 Should an owner of land within the District or a proponent request the rezoning of a site to "Rural Residential" zone, the local government shall require that owner or proponent to provide to the local government a submission supporting the rezoning, and such submission shall include the following:		
i)	*A clear statement of the objectives of the proposal;*	The purpose of this Amendment is to rezone the subject site from Priority Agriculture to Rural Residential to enable rural residential subdivision and development on the subject site. The Amendment represents a consolidation of the adjoining, existing Rural Residential Area 12.
ii)	*A statement indicating the relationship of the proposal to the local government's adopted Local Planning Strategy, and any other approved planning study adopted by the local government and specific to the area in which the subject land is located;*	The applicable planning framework, including the Shire's Local Planning Strategy (2003) and draft Local Planning Strategy, is discussed in the context of the proposal within **section 4.0** of this Report.
iii)	*A full description of the site characteristics of the subject land including an analysis of the geology and soil types of the area, existing land forms and land uses;*	The site conditions and characteristics are described in **section 3.0** of this report and further detailed in an Environmental Summary Report which is contained in **Appendix A.**
iv)	*A landscape assessment including an analysis of slopes, vegetation cover, skylines, vistas, stream environs and identifiable natural features;*	An assessment of the landscape is included within **section 3.0** of this report. Further, a Broader Landscape Assessment has been undertaken as part of the BMP refer **Appendix C**, which included a detailed analysis of slopes and vegetation.
v)	*Information regarding the availability of potable/non-potable/secondary water, and the methods whereby it is proposed to supply potable water to service each proposed subdivisional lot;*	Reticulated water is available to the subject site, having been established as part of Bella Vista Estate.
vi)	*A brief outline of the planning structure, including the proposed areas to be subdivided, areas to be set aside for public open space, pedestrian accessways, trails, community facilities, those physical features including places, things, buildings and structures intended to be conserved or preserved;*	Technical investigations clearly demonstrate that the site can be developed and achieve this requirement. In granting approval to advertise, however, WAPC required removal of requirements for and references to a concept plan or similar from the amendment.
vii)	*Identification of any special development controls considered necessary or desirable; and*	See above. No special development controls are considered necessary or desirable.
viii)	*Such other particular information details or documents as the Local government reasonably requires to decide upon the merits of the rezoning.*	N/A

4.3.2 State Planning Policies

4.3.2.1 State Planning Policy 2.5 – Rural Planning

State Planning Policy 2.5 – Rural Planning (**SPP2.5**) seeks to protect and preserve Western Australia's rural land assets due to the importance of their economic, natural resource, food production, environmental and landscape values. SPP2.5 provides a basis for planning and decision making for rural and rural living land across Western Australia and it aims to protect and preserve rural land for rural purposes. The creation of new rural lots should be consistent with the objectives of the policy. SPP2.5 applies to rural land and rural land uses, as well as land that may be impacted by rural land uses.

Clause 5.3 in SPP2.5 covers 'rural living proposals' which include an amendment to a strategy or scheme to provide for or extend, a rural living precinct. Refer to **Table 4** below for further discussion on the policy measures in the context of the proposed Scheme Amendment.

Table 4 - SPP2.5 Clause 5.3 Policy Measures

Clause 5.3 Policy Measure	Applicant Response
(a) Rural living proposals shall not be supported where they conflict with the objectives of this policy or do not meet the criteria listed at 5.3 (b) and (c);	Noted.
(b) The rural living precinct must be part of a settlement hierarchy established in an endorsed planning strategy;	Refer to discussion in **section 4.1**.
(c) The planning requirements for rural living precincts are that –	
(i) The land be adjacent to, adjoining or close to existing urban areas with access to services, facilities and amenities;	The subject site is located 4 km south-west of the Manjimup town centre, which provides access to existing services, facilities and amenities. The subject site abuts Bella Vista Estate.
(ii) The proposal will not conflict with the primary production of nearby land, or reduce its potential;	The subject site is surrounded by existing rural residential properties to the north, and a Blue Gum plantation to the west and south which is currently being harvested and will be fully harvested by the end of May 2026. In light of this, the proposal for rural residential zoning will not conflict with the primary production of nearby land. Once the Blue Gum plantation is discontinued, the subject site will be able to be bound by an 6m FSAR route and building envelopes for future lots also to be well setback from western and southern boundaries of the site.
(iii) Areas required for priority agricultural land are avoided;	The subject site is not suitable for productive agricultural land for the reasons detailed in **section 6.2** of this Report including the site area, its water supply, vegetation clearing restrictions and existing adjacent residential land uses.
(iv) The extent of proposed settlement is guided by existing land supply and take-up, dwelling commencements and population projections;	Noting the reduction in the future supply of rural residential lots within the Shire as explained in **section 6.2** of this Report, the development intended represents a net reduction in the rural residential land within the Shire.
(v) Areas required for urban uses are avoided;	The subject site is suitably located next to existing rural residential lots but is sufficiently distant from the Manjimup townsite where future urban areas may be identified or land may be appropriate for the townsite's future urban expansion.

Clause 5.3 Policy Measure	Applicant Response
(vi) Water supply shall be as follows – *— Where lots with an individual area of four hectares or less are proposed and a reticulated water supply of sufficient capacity is available in the locality, the precinct will be required to be serviced with reticulated potable water by a licensed service provider.* *— Should an alternative to a licensed supply be proposed it must be demonstrated that a licensed supply is not available; or* *— Where a reticulated supply is demonstrated to not be available, or the individual lots are greater than four hectares, the WAPC may consider a fit-for-purpose domestic potable water supply, which includes water for fire fighting. The supply must be demonstrated, sustainable and consistent with the standards for water and health; or* *— The development cannot proceed if an acceptable supply of potable water cannot be demonstrated;*	Reticulated water, power and telecommunication services are all available to the subject site, having been established as part of the Bella Vista Estate. Alternative Treatment Units (ATUs) are currently used on lots within the Bella Vista Estate adjacent to the subject site, which have proven to be a suitable effluent disposal system for the characteristics of the land. Refer to the Land Capability Assessment in **Appendix A.**
(vii) Electricity supply shall be as follows – *— Where a network is available the precinct is to be serviced with electricity by a licensed service provider; or* *— Where a network is not available, the precinct is to be serviced by electricity from renewable energy source/s, by a licensed service provider, and this has been demonstrated;*	
(viii) The precinct has reasonable access to community facilities, particularly education, health and recreation;	The subject site has good access to nearby community facilities including education, health and recreation. The subject site is conveniently located 4 km south-west of the Manjimup town centre, and is less than 5km to a variety of existing local and regional community facilities including the East Manjimup Primary School (3.8km), Manjimup Primary School (4.5km), Manjimup Senior High School (4.5km), Kearnan College (3.7km), the Manjimup Airport (1.4km), Warren District Hospital (4.3km) and the Manjimup Regional AquaCentre (4.3km) as well as a variety of shops, restaurants and cafes within the town centre.
(ix) The land is predominantly cleared of remnant vegetation, or the loss of remnant vegetation through clearing for building envelopes, bushfire protection and fencing is minimal and environmental values are not compromised;	For supporting information, refer to **section 3.1.3** and the Environmental Summary Report at **Appendix A.**
(x) The proposal demonstrates and will achieve improved environmental and landscape outcomes and a reduction in nutrient export in the context of the soil and total water management cycle, which may include rehabilitation as appropriate;	Refer to the Environmental Summary Report at **Appendix A** for further information.
(xi) The land is capable of supporting the development of dwellings and associated infrastructure (including wastewater disposal and keeping of stock) and is not located in a floodway or an area prone to seasonal inundation;	Refer to **section 3.4** for supporting information confirming that the subject site is capable of supporting the development of dwellings and associated infrastructure, including flooding and erosion factors.
(xii) The land is not subject to a separation distance or buffer from an adjoining land use, or if it is, that no sensitive land uses be permitted in the area of impact;	N/A – the subject site is not subject to separation distances from other existing land uses.
(xiii) The lots can be serviced by constructed road/s capable of providing access during all weather conditions, including access and egress for emergency purposes; and	The lots are capable of being serviced by constructed roads and have appropriate access. Refer to detailed explanation in **section 3.5**.
(xiv) Bushfire risk and natural hazards can be minimised and managed in accordance with State policy, without adversely affecting the natural environment. Proposals in areas of extreme bushfire risk will not be supported;	Refer to **section 4.3.2.3** and the BMP at **Appendix B** for further discussion on how the proposal addresses the bushfire risk requirements of SPP3.7.
(d) Development standards for rural living zones are to be included in local planning schemes;	Technical investigations clearly demonstrate that the site can be developed and achieve this requirement. In granting approval to advertise, however, WAPC required removal of requirements for and references to a concept plan or similar from the amendment.

Clause 5.3 Policy Measure	Applicant Response
(e) Further subdivision of existing rural living lots into smaller parcels is not supported, unless provided for in a local planning strategy and/or scheme; and	N/A - the proposal does not involve the further subdivision of existing rural residential lots into smaller parcels.
(f) Rural strata proposals with a residential component are considered to be rural living and will be considered in accordance with the criteria listed at clauses 5.3 (a), (b) and (c) of this policy. Where there may be a conflict between endorsed planning strategies, the higher order and/or more recent document shall prevail.	N/A – no rural strata proposed.

The proposed Scheme Amendment is generally consistent with the policy measures applicable to rural living proposals, especially noting that it promotes a sustainable settlement adjacent to an existing rural residential area and is in proximity to the Manjimup town centre. The subject site has access to services, facilities and amenities and does not conflict with any primary production of nearby agricultural land. Furthermore, the subject site is not able to be used for agricultural purposes.

In addition to the above, the Land Capability Assessment undertaken demonstrates the land is capable of supporting the development of dwellings and associated infrastructure (refer **Appendix A**). Also, existing landscape assets can be retained.

4.3.2.2 State Planning Policy No. 3.0 – Urban Growth and Settlement

State Planning Policy 3.7 – Urban Growth and Settlement (**SPP3.0**) is broad sector policy that sets out the principles and considerations which apply to planning for urban growth and settlement in Western Australia. The purpose of the Policy is to facilitate sustainable patterns of urban growth and settlement by setting out the requirements of sustainable settlements and communities and the broad policy for accommodating growth and change. SPP 3.0 outlines general measures to create sustainable communities, plan liveable neighbourhoods, coordinate services and infrastructure, manage rural-residential growth and plan for aboriginal communities.

Clause 5.6 in SPP3.0 provides guidance on managing rural residential growth and outlines how to locate and design rural-residential settlements in a sustainable way which is integrated with the overall pattern of settlement. Under this clause, the Policy states that planning for rural residential development should:

- avoid productive agricultural land, important natural resources, areas of high bush fire risk or environmental sensitivity;
- avoid future urban areas or areas particularly suitable for urban development in terms of their characteristics and proximity to urban services;
- give preference to locations near existing settlements with available services and facilities in order to support the local community and avoid locations where services are not available or costly extensions are necessary;
- minimise potential for conflict with incompatible activities associated with productive rural uses or natural resource management;
- only include locations which are suitable for this type of development, such as land which is topographically varied, visually attractive and with distinctive environmental attributes or otherwise has potential for lifestyle pursuits; and
- take a realistic approach by allocating land based on forecast estimates of demand for rural living not on the speculative development of land.

The proposed Scheme Amendment addresses the above considerations raised in Clause 5.6 as follows:

- The subject site is not suitable for productive agricultural land for the reasons detailed further in **section 6.2.1** of this Report including the area of the site, its water supply, vegetation clearing restrictions and existing adjacent rural residential land uses. Bushfire risk and environmental sensitivity considerations have been thoroughly investigated and adequately addressed (refer to **Appendix A** and **B**).

- The subject site is suitably located adjacent to existing rural residential lots but is sufficiently distant from the Manjimup townsite where future urban areas may be identified or land may be appropriate for the townsite's future urban expansion.
- The development intended under the proposed zoning represents a logical extension to the existing Bella Vista Estate rural-residential settlement, in a form which will utilise existing infrastructure and services.
- The subject site is topographically varied and gently slopes towards the dam located west of the land and has high points which offer expansive views of the distant landscape. The subject site adjoins rural-residential properties to the north which form the Bella Vista Estate, where the homes have been constructed to a high standard, are well vegetated and well maintained, contributing to the existing visual amenity of the immediate area.
- Noting the reduction in the future supply of rural residential lots within the Shire as explained in **section 6.2.2**, the development intended under this Scheme Amendment Request will facilitate the development of additional rural-residential lots, but overall would still represent a net reduction in the rural residential land within the Shire.

As demonstrated above, the proposed Scheme Amendment is considered to align with clause 5.6.

4.3.2.3 State Planning Policy 3.7 – Planning in Bushfire Prone Areas

State Planning Policy 3.7 – Planning in Bushfire Prone Areas (**SPP3.7**) seeks to implement effective risk-based and land use planning and development to improve the protection of property and infrastructure from bushfire impacts. It provides the framework and foundation for addressing bushfire risk management through the implementation of land use planning and construction practices. SPP3.7 is accompanied by Guidelines for Planning in Bushfire Prone Areas (**Guidelines**) which provides advice on how bushfire risk is to be addressed when planning, designing or assessing a planning proposal within a designated Bushfire Prone Area.

The Department of Fire and Emergency Services (**DFES**) bushfire mapping identifies that the subject site is located within a Bushfire Prone Area (Area 2), and the site is subject to the provisions of SPP3.7. As required by Clause 7.1(ii) of SPP 3.7, a Bushfire Management Plan (**BMP**) has been prepared to support this Scheme Amendment Request, in order to address the relevant Guidelines which, accompany SPP3.7. The BMP prepared provides guidance on how to plan for and manage the bushfire risk to the subject site through the implementation of a range of bushfire management measures.

A Broader Landscape Assessment was undertaken as an addendum to the BMP in accordance with Appendix A of the Guidelines, and it examines the area external to the subdivision application area (extending for a distance of approximately two kilometres). The Broader Landscape Type determined for the proposal is Type A, and no further assessment is required.

A Bushfire Attack Level (**BAL**) Contour Map was prepared as part of the BMP, and it demonstrates that all of the area proposed to be rezoned is capable of achieving building envelopes with acceptable BALs of 29 or lower. The final BAL ratings applicable to future dwellings on each of the lots will be subject to the subdivision application stage and the building design at the Building Permit stage.

Bushfire considerations form an integral part of the development envisaged under the proposed Scheme Amendment, as outlined in **section 3.7** of this report and the BMP provided at **Appendix C**.

4.3.2.4 State Planning Policy 5.4 – Road and Rail Noise

The purpose of State Planning Policy 5.4 – Road and Rail Noise (**SPP5.4**) is to minimise the adverse impact of road and rail noise on noise sensitive land uses and/or development within the specified trigger distance of strategic freight and major traffic routes and/or other significant freight and traffic routes. SPP 5.4 applies to the preparation and assessment of planning instruments and planning proposals in Western Australia, where a noise-sensitive land use (such as rural residential) is proposed within the Policy's trigger distance.

The south-eastern area of the subject site is within the trigger distance of South Western Highway, which is identified as an 'Other significant freight/traffic route' under SPP5.4 and is subject to the Policy's provisions.

Clause 6.5.2 states that region and local planning schemes and amendments, structure plans and activity centre plans, as planning instruments, are to address the impact of noise through:

a) *identification of appropriate compatible land-use zoning that is commensurate with the function of the transport corridor;*
b) *design solutions that utilise street and lot configuration to screen and/or buffer noise;*
c) *consideration of density and built form outcomes that will help alleviate and/or manage noise;*
d) *outlining the need for additional noise mitigation measures through quiet house requirements and or noise barriers in accordance with the guidelines; and*
e) *consideration to appropriate future planning provisions to ensure more detailed planning is undertaken at the subdivision and development stage.*

The proposed Scheme Amendment for rural residential zoning is compatible with adjacent transport corridor for South Western Highway, recognising that there are approximately seven other existing rural residential lots within the Bella Vista Estate also located within the specified trigger distance of South Western Highway. The proposed area to be rezoned adjoining the existing Bella Vista Estate does not substantially intensify the use of the land. Due to the larger lot size for rural residential lots, dwellings can be setback from South Western Highway, and this can substantially reduce the level of noise received at the dwellings, acting as a buffer. Dwellings also can be subject to additional noise mitigation measures if required, such as the quiet house requirements in accordance with the associated Road and Rail Noise Guidelines to SPP5.4.

Noise considerations and mitigation measures will be addressed as part of the future subdivision and development of the subject site. As such a Noise Management Plan outlining the proposed noise mitigation measures will be provided as part of a subsequent subdivision application. It is expected that a notification will be required to be placed on the certificate of title of the affected proposed lots as a condition of any subdivision approval.

4.3.2.5 Government Sewerage Policy

The Government Sewerage Policy (2019) sets out the WA State Government's position on how sewerage services are to be provided in Western Australia through the planning and development of land. The Policy requires reticulated sewerage to be provided during the subdivision and development stages and in instances where reticulated sewerage cannot be provided, the Policy adopts a best practice approach to the provision of on-site sewage treatment and disposal.

The policy applies to planning proposals including strategic plans, local planning schemes, structure plans, subdivision and development applications. Schedule 1 in the Policy sets out the supporting information that should be provided at different stages of the planning process and Schedule 2 sets out the technical components for the provision of on-site sewage disposal. The policy provides guidance for minimum lot sizes to be connected to sewer (shown in a table under Clause 5.2.1 of the Policy). The Policy stipulates that scheme amendment requests proposing on-site sewage disposal should provide supporting information to demonstrate that future development is capable of accommodating on-site sewage disposal in accordance with Section 5 and Schedule 2, including:

- identification of any land within a public drinking water source area or a sewage sensitive area;
- identification of any affected water resources;
- site and soils conditions;
- capacity of site to accommodate application;
- proposed on-site sewerage system.

The Land Capability Assessment contained in **Appendix A** demonstrates that the proposed Scheme Amendment is in accordance with the requirements of the Government Sewerage Policy.

4.3.3 Local Planning Policies

4.3.3.1 Local Planning Policy 6.1.19 - Managing the Natural Environment

The purpose of the Shire's Local Planning Policy 6.1.19 – Managing the Natural Environment (**LPP6.1.19**) is to raise awareness of the natural environment and the threats to natural resource assets, and to also ensure principles of ecologically sustainable development are considered in planning decisions within the Shire. In accordance with Clause 4.1 and 4.2 of the Policy, it applies to the Shire's consideration of all planning related applications including scheme amendments.

Clause 5 in the Policy provides protective policy measures to recognise the significance of natural resource assets within the Shire. **Table 5** below provides an assessment of the relevant protective policy measures in relation to the proposed Scheme Amendment.

Table 5 - LPP6.1.19 Protective Policy Measures

Protective Policy Measure	Applicant Response
5.1 General	
5.1.2 Assessment of any possible environmental impacts/constraints should occur at an early stage in the development process so that the proposal can be developed with required design modifications made to alleviate any possible adverse impacts to the environment.	An Environmental Summary Report has been prepared in support of this Scheme Amendment Request and is contained in **Appendix A**.
5.1.4 Council may require proponents and or the landowners to submit, where appropriate, additional information in the form of an ecological footprint analysis, biodiversity assessment or impact statement outlining whether the application has the potential to cause environmental impacts from the following, but not limited to; (i) any clearing of native vegetation, (ii) water use, (iii) waste, (iv) energy use (v) pollutants, (vi) contamination, (vii) acid sulphate soils, and (viii) any other information considered necessary by Council.	An Environmental Summary Report has been prepared in support of this Scheme Amendment Request and is contained in **Appendix A**.
5.2 Water Resources	
5.2.3 Stormwater retention, use and quality treatment should be at source or as high as possible in the catchment and adopt best practice water sensitive design wherever possible and practical to the satisfaction of Council. This applies to all catchment scales from a residential lot to a river catchment.	Additional information relating to stormwater will be submitted at the future subdivision or development application stages when further detailed information is known.
5.3 Soil and Land Quality	
***5.3.1** Where there may be a risk of creating or disturbing acid sulphate soils in the opinion of Shire Officer's and/or other government/NRM agency, a management plan or other measures will be required in accordance with the latest guidelines from the Department of Water and Environment Regulation (DWER), Department of Primary Industries and Regional Development (DPIRD), the Department of Biodiversity Conservation and Attractions (DBCA), and the WAPC.*	The soil is well-drained and the acid sulfate soil risk on the site is classified as C4 – Extremely Low Probability / Very Low Confidence. As such, a management plan is not likely to be required.
***5.3.2** Where there is the possibility of the existence of a contaminated site proponents should minimise the risk of human health and the environment by ensuring that the proposal is such as to minimise the potential for any adverse impacts from the contaminated site to the satisfaction of the Shire and where applicable, the Environmental Protection Authority.*	Review of the DWER Contaminated Sites Database indicates there are no registered contaminated sites on the subject land or adjoining properties.
5.4 Land Clearing	
***5.4** Clause 5.7.3 of the Scheme identifies where a development approval is required to be obtained for land clearing. Notwithstanding this, approval for the clearing native vegetation may be required under the Environmental Protection Act 1986 and the Country Area Waters Supply Act 1947.*	Noted.
5.5 Biodiversity	
***5.5.6** Conditions of Approval may restrict the clearing of native vegetation and/or may require any clearing requests to be separately considered by DWER as part of the Environmental Protection (Clearing of Native Vegetation) Regulations 2004.*	Noted.
5.6 Land Management	
***5.6.1** For "rural life-style" subdivisions (including rural residential, rural small holdings and conservation lots), the proponent may be required to prepare or financially contribute to an education*	Noted.

Protective Policy Measure	Applicant Response
programme for the new owners, prior to the issue of titles, concerning their obligations to the environment and community including stock rates, fencing, weeds, fire-risk abatement and fire break maintenance.	
***5.6.2** Subject to the nature and scale of a subdivision proposal, its location, proposed level of servicing and anticipated impacts on the natural environment, the Shire may request a restrictive covenant for the purpose of limiting the environmental impact.*	Noted.
***5.6.3** Restrictions may be imposed on the keeping of animals or other biodiversity key threatening processes to reduce the potential for on-site and off-site impacts of land use on the environment, natural resources and natural systems.*	Noted.
5.8 Fire Management	
***5.8** Proposals will be assessed, where relevant, against the SPP 3.7 Planning in Bushfire Prone Areas 2015. The safety of people and property as well as appropriate management of the natural environment shall be maximised. If proponents cannot demonstrate compliance with safety and the protection of the natural environment, then Council may refuse or not support the proposal.*	Refer to **section 4.3.2.3** above and the BMP at **Appendix C** for further discussion on how the proposal addresses the requirements of SPP3.7.



5.0

Scheme Amendment Request

5.0 Scheme Amendment Request

5.1 Scheme Amendment Request

This Amendment proposes to rezone approximately 6.5ha of land from Priority Agriculture to Rural Residential under the Shire of Manjimup Local Planning Scheme No. 4 and consolidate the existing Bella Vista Estate (Rural Residential Area No. 12).

5.1.1 Proposed Council Resolution

It is proposed to amend Local Planning Scheme No.4 by:

1. Rezoning a portion of Lot 101 Demiris Drive, Jardee from Priority Agriculture to the Rural Residential zone, including the subject site within a new Rural Residential Area (Area No. 34), and amending the Scheme Map accordingly (refer **7**);
2. Amending Schedule Two – Rural Residential - Additional Requirements of Local Planning Scheme No. 4, to include the following provision for the subject site:

Area No. 34	Special Provisions
Portion of Lot 101 Demiris Drive, Jardee	**1.** The minimum lot area shall be 1 hectare.

SHIRE OF MANJIMUP
Local Planning Scheme No.4
Amendment No. X

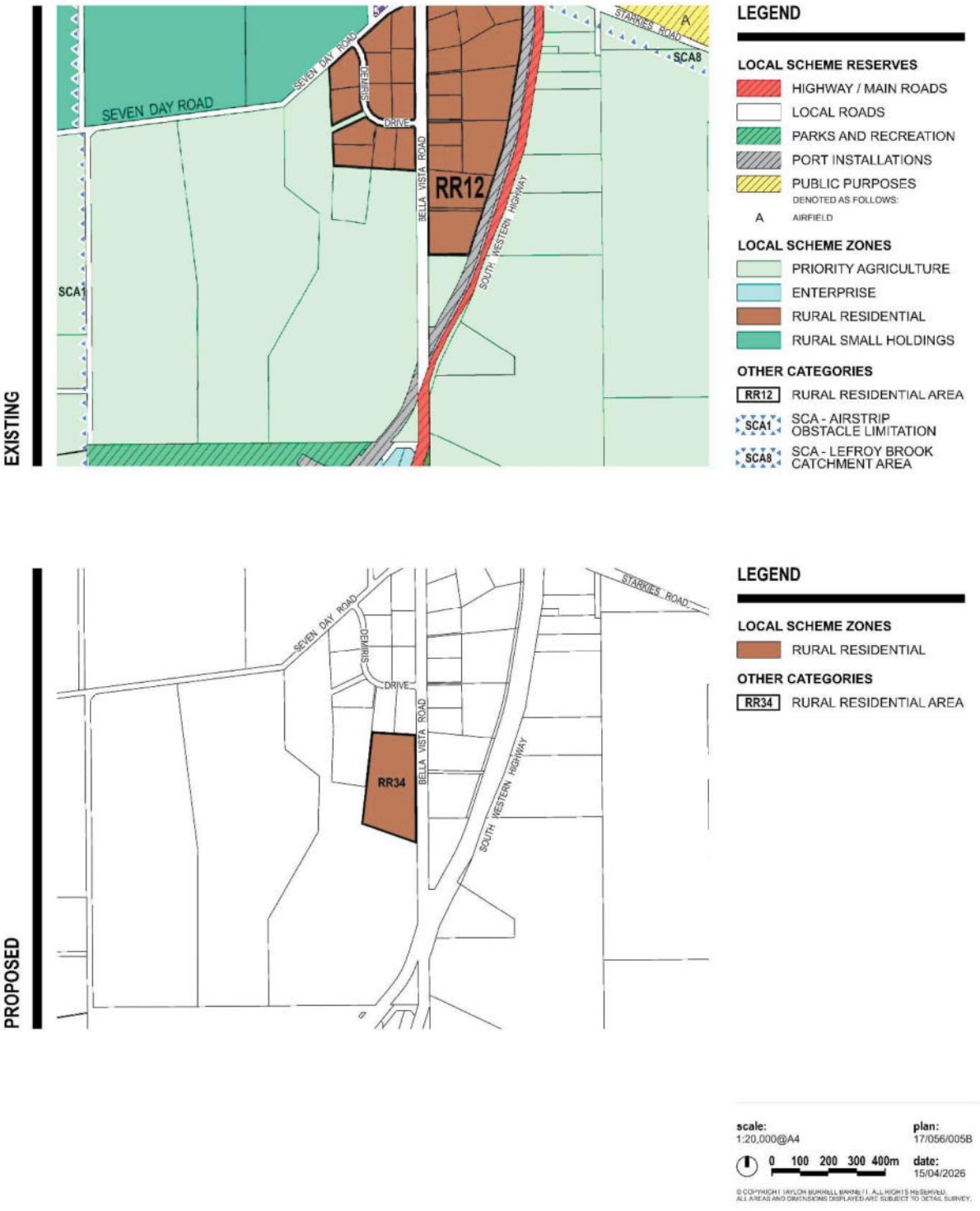


Figure 7 - Proposed Amendment to Scheme Map

5.2 Justification

5.2.1 Environmental

The site is predominately cleared, with only 3.3 ha of degraded native vegetation remaining which is not considered to be of conservation significance. While this vegetation may have some value as habitat for native fauna such as black cockatoos, the limited extent of clearing required to facilitate rural residential development is not anticipated to have a deleterious impact on this habitat. The retention of native vegetation in accordance with the Standards for Asset Protection Zones (WAPC 2021) is expected to maintain the site's functionality as a stepping stone for the movement of avian fauna. Furthermore, the installation of gardens associated with rural residential development may increase the availability of habitat for some terrestrial fauna.

From a land use perspective, the site's current zoning as Priority Agriculture is irreflective of its limited agricultural potential. Despite high level mapping suggesting that the site's soils may be conducive to annual horticulture crops, the site's small size (6.5 ha), absence of historical agricultural activity, the presence of native vegetation, and the unavailability of unallocated surface water indicate that agricultural activities are not appropriate for the site's conditions.

In contrast, there is considered to be a low risk associated with pursuing rural residential development on the site. Depth to groundwater, the ability of soils to retain and absorb phosphorous, and the large availability of space for treated sewage application suggest that there are no constraints to the accommodation of onsite sewage disposal. Furthermore, rural residential land uses immediately to the north and east demonstrate proof-of concept in conditions identical to those on-site.

The landscape assessment demonstrates that the slopes, vegetation cover, skylines and vistas, stream environs and other natural features are all highly conducive to rural residential land use.

5.2.2 Rural Residential Land Supply

At its Ordinary Council Meeting (**OCM**) on 23 January 2020, the Shire of Manjimup approved the development of a dam on Rural Residential zoned land (No. 87 Dingup Road, Dingup – LG Ref: DA19/172 P55612). As acknowledged in the OCM Meeting Minutes, the development of the dam impacts the ability of this site to be subdivided for rural residential purposes, given its size and location. The OCM Minutes also confirm that the current landowners of the lot have indicated they wish to continue to use the property as a rural property for the purpose of cattle farming and have no intention to subdivide the land for rural residential purposes. On this basis, the Council resolved to remove this lot from the Rural Residential zone under the draft LPS No. 5.

This decision of Council removes the potential to create 39 rural residential lots, eliminating concerns regarding a possible oversupply of rural residential land within the Shire. The development intended under this Scheme Amendment Request still represents a net reduction in rural residential land in the Shire.

It also noted, since Bella Vista Estate was established in 1993 and the original request to rezone the land in 1996, the landowners of Lot 42 have received a continuous level of support to the expansion of Bella Vista Estate. It is considered essential to continue the supply of appropriate rural residential and/or special rural lots within Manjimup.

Upon the Scheme Amendment proceeding, subdivision and development of the site is intended to occur in a staged approach. The first stage is likely to commence in the north, adjacent to Lots 18 and 19. Subsequent stages will depend on the market conditions at the time, with market demand the key determinant of stage release, the number of lots to be included and key infrastructure to be developed.

5.2.3 Rural Residential Land Capability

As detailed in **section 3.4**, the Land Capability Assessment (refer **Appendix A**) undertaken for the subject site demonstrates that the site is suitable for rural residential development, and capable of accommodating on-site septic systems, rural-residential houses and roads. Rural residential lots already exist adjacent to the site on exactly the same landforms and soil types that exist at the site. It is therefore considered that rural residential development on the site will just as successful as the existing Bella Vista Estate.

The interface between the proposed Rural Residential zone and Priority Agriculture zone is intended to be managed through a 6m wide FSAR which will bound the subject site. Furthermore, the BMP identifies indicative building envelopes setback approximately 27m and 88m from the western and southern boundary of the site respectively **thereby** providing a sufficient buffer from any future agricultural uses. It should be noted that the BMP will need to be reviewed at subdivision stage, reflecting the smaller area proposed to be rezoned as required by the WAPC's conditions of approval to advertise.

5.2.4 Strategic Location

The subject site is strategically suited to accommodate rural residential development given its ready access to existing roads including Seven Day Road, and South Western Highway.

The subject site is also conveniently located 4 km south-west of the Manjimup town centre, and is less than 5km to a variety of existing local and regional community facilities including the East Manjimup Primary School (3.8km), Manjimup Primary School (4.5km), Manjimup Senior High School (4.5km), Kearnan College (3.7km), the Manjimup Airport (1.4km), Warren District Hospital (4.3km) and the Manjimup Regional AquaCentre (4.3km) as well as a variety of shops, restaurants and cafes.

The site is located adjacent to existing rural residential development to the north and east, including the Bella Vista Estate and is considered a rounding out of the existing rural residential cell.

7.0

Conclusion

6.0 Conclusion

On the basis of the information included in this Report, it is considered that there are sufficient rationale and justification for the subject site to be rezoned from Priority Agriculture to Rural Residential under the Shire of Manjimup LPS4 as a consolidation of Rural Residential Area 12.

The subject site is strategically located adjacent to the existing Bella Vista Estate, is in proximity to the Manjimup Town Centre, and services and infrastructure and its relatively unconstrained nature. Furthermore, the characteristics of the subject site are not suited to accommodating agricultural uses due to the existing size of the site, absence of historical agricultural activity, the presence of native vegetation, and the unavailability of unallocated surface water.

It is therefore requested that the Shire of Manjimup initiate an amendment to LPS4 to rezone the subject site from Priority Agriculture to Rural Residential.

Planning and Development Act 2005

RESOLUTION TO AMEND LOCAL PLANNING SCHEME

Shire of Manjimup Local Planning Scheme No. No. 4 (LPS4)
[Amendment Number 34]

Resolved that the Local Government pursuant to section 75 of the *Planning and Development Act* 2005, amend the above Local Planning Scheme by:

1. Classifying a portion of Lot 101 Demiris Drive, Jardee as Rural Residential RR34;

2.0. Inserting the specified land and related special provisions within Schedule 2 of the Scheme Text;

(i) The minimum lot area shall be 1 hectare.

3.0. Amending the Scheme Maps accordingly.

AMENDMENT MAP
(IF APPLICABLE)

EXISTING MAP



PRPOSED AMENDMENT MAP



FORM 6A

COUNCIL ADOPTION

This Complex Amendment was adopted by resolution of the Council of the Shire of Manjimup at the Shire of Manjimup Meeting of the Council held on the 28th day of October, 2025.

.....

MAYOR/SHIRE PRESIDENT

.....

CHIEF EXECUTIVE OFFICER

COUNCIL RESOLUTION TO ADVERTISE

by resolution of the Council of the Shire of Manjimup at the Shire of Manjimup Meeting of the Council held on the 28th day of October, 2025, proceed to advertise this Amendment.

.....

MAYOR/SHIRE PRESIDENT

.....

CHIEF EXECUTIVE OFFICER

COUNCIL RECOMMENDATION

This Amendment is recommended for support by resolution of the Shire of Manjimup at the Shire of Manjimup Meeting of the Council held on the _____ day of _____, 20__ and the Common Seal of the Shire of Manjimup was hereunto affixed by the authority of a resolution of the Council in the presence of:

.....

MAYOR/SHIRE PRESIDENT

.....

CHIEF EXECUTIVE OFFICER

WAPC ENDORSEMENT (r.63)

.....

DELEGATED UNDER S.16 OF
THE P&D ACT 2005

DATE.....

APPROVAL GRANTED

.....

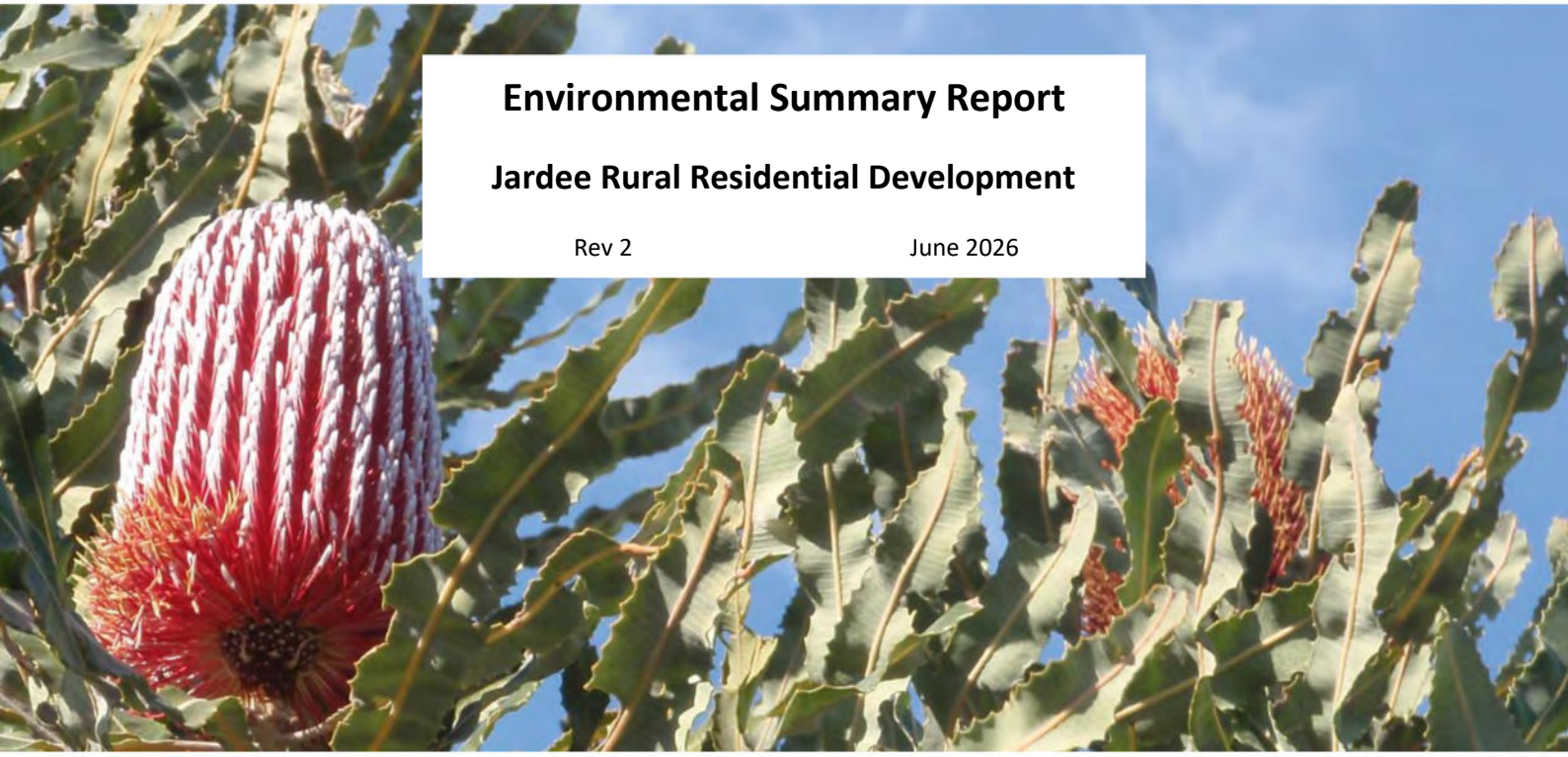
MINISTER FOR PLANNING

DATE.....

Appendix A

ENVIRONMENTAL SUMMARY REPORT

COTERRA ENVIRONMENT



Environmental Summary Report

Jardee Rural Residential Development

Rev 2 June 2026

CALIBRE | COMMITMENT | COLLABORATION

This report was prepared by: Coterra Pty Ltd trading as COTERRA ENVIRONMENT
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Our Ref: TBBJAR03
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Appendix 2 Land Capability for Re-zoning Purposes: AM & M Moltoni – Bella Vista Road – Manjimup (Ashley Prout and Associates 2006)

1 Introduction

Lot 101 Demiris Drive, Jardee is located within the Shire of Manjimup, approximately 4 km south west of the Manjimup town centre. The lot encompasses approximately 44 ha of cleared pastures, remnant vegetation, constructed dams, and blue gum plantations.

To meet increasing demand for rural residential properties in proximity to the Manjimup town centre, the owner of Lot 101 (the proponent) intends to pursue a rezoning and subdivision across a portion of the lot adjacent to Bella Vista Road (the site; Figure 1). The site encompasses 6.5 ha and is afforded access from Bella Vista Road. Located at the interface between existing rural residential development to the north and priority agricultural land to the south (Figure 2), the site represents a logical extension of the existing rural lifestyle neighbourhood.

1.1 Planning Context

The site is currently zoned 'Priority Agriculture' in the Shire of Manjimup Local Planning Scheme No.4 (LPS 4) and identified as 'Priority Agriculture' in the Shire of Manjimup Local Planning Strategy (2003). The classification of this land as priority agriculture was in line with Statement of Planning Policy 11 ('Agricultural and Rural Land Use'), which has now been superseded by State Planning Policy 2.5 – Rural Planning (see section 2.3).

The Shire of Manjimup is currently progressing a 'light' version of its draft Local Planning Strategy to replace the existing 2003 version and facilitate the preparation of a new Local Planning Scheme No. 5. It is anticipated that this 'light' version of the Local Planning Strategy will be lodged with the Western Australian Planning Commission (WAPC) in the coming months. Notwithstanding, the proposed Scheme Amendment is considered to be a consolidation of the existing zone, and it is therefore anticipated that the Amendment can progress ahead of these updates to the Shire's planning framework.

1.2 Existing Land Use

The majority of the site is currently cleared, with an isolated stand of degraded vegetation occurring in the central and western portion of the site. Pastures occupy the remainder of the site.

The site is bound by rural-residential properties to the north, Bella Vista Road to the east, farmland to the south and a dam to the west.

1.3 Purpose of this Report

This report has been prepared to:

- Detail the environmental characteristics of the site
- Identify potential environmental impacts
- Discuss the proposed design/management response in a land use and subdivision context
- Review the land's capability for rural residential development
- Assess the site's landscape values

This report will be submitted to the Shire of Manjimup with a request to amend the Shire's LPS 4, to facilitate Rural residential development of the site.

2 Relevant Legislation, Policies and Guidance

2.1 Environmental Protection Act 1986

The *Environmental Protection Act 1986* ('the Act') is the pre-eminent environmental legislation in Western Australia. Development projects are regulated under Part IV of the Act.

The Environmental Protection Authority (EPA) may assess projects referred to them under the Act under either s. 48A (such as region scheme and/or town planning scheme amendments) or s. 38 (such as significant subdivision/ development projects). All rezonings are referred to the EPA for consideration on whether a formal assessment is required.

The clearing of native vegetation is controlled under Part V of the Act, and the associated *Environmental Protection (Clearing of Native Vegetation) Regulations* (2004).

The Act also has a number of Environmental Protection Policies and regulations which provide guidance on environmental management throughout the state.

2.2 Country Areas Water Supply Act 1947

The *Country Areas Water Supply Act 1947* (CAWS Act) controls the clearing of native vegetation within several potential water source catchments that have been proclaimed under the act, including:

- Mundaring Weir catchment area
- Wellington Dam catchment area
- Harris River Dam catchment area
- Warren River water reserve
- Kent River water reserve
- Denmark River catchment area

The clearing of vegetation in these catchments has been controlled through the issuing of Licenses to Clear under the CAWS Act since the mid 1970's, to prevent further salinisation of water resources which occurs if land is permanently cleared (Department of Water 2008).

Since 2004, EP Act regulations that deal with the clearing of native vegetation throughout Western Australia were implemented. The requirement for a license to clear native vegetation under Part V of the EP Act now supersedes licensing requirements under the CAWS Act. However, some exemptions from the requirement for a clearing permit under the EP Act do not apply to the CAWS Act, such as clearing in accordance with a subdivision approval (EP Act Schedule 6, Item 9). In such scenarios, approval under the CAWS Act is required, unless a valid exemption under that act applies.

In the context of the proposed development, the site is located within the Warren River water reserve, zone D (lowest salinity risk) as proclaimed under the CAWS Act (Figure 1). Recognising that rural residential development of the site will necessitate minor clearing of degraded vegetation, the provisions of the CAWS Act will apply.

It should be noted that Section 12C(c) of the CAWS Act provides an exemption from the requirement for a clearing license under the act, if the clearing is undertaken as an essential measure in performing an obligation or carrying out a duty under the *Bushfires Act 1954.* Further information on clearing associated with the *Bushfires Act 1954* is provided within the site's Bushfire Management Plan

(Bushfire Safety Consulting 2026), which should be read in conjunction with this Environmental Summary Report.

2.3 State Planning Policy 2.5 – Rural Planning

State Planning Policy 2.5 – Rural Planning (SPP 2.5) (WAPC 2016) has been prepared to both protect and facilitate development of rural land for rural purposes, including primary production, basic raw materials, regional facilities and protection of biodiversity and landscape (WAPC 2016).

SPP 2.5 aims to support rural-zoned development under the State and local government planning frameworks for scheme amendments, structure plans and subdivision/development proposals on rural-zoned land (WAPC 2016).

The objectives of SPP 2.5, relevant to the site, are to:

- Support existing, expanded and future primary production through the protection of rural land, particularly priority agricultural land and land required for animal premises and/or the production of food
- Provide a planning framework that comprehensively considers rural land and land uses, and facilitates consistent and timely decision-making
- Avoid and minimise land use conflicts
- Promote sustainable settlement in, and adjacent to, existing urban areas
- Protect and sustainably manage environmental, landscape and water resource assets.

SPP 2.5 – Rural Planning Guidelines (SPP 2.5 Guidelines) (WAPC 2016) and Development Control Planning Policy 3.4 – Subdivision of Rural Land (DC 3.4) (WAPC 2016) have been prepared to guide the implementation of SPP .5 – Rural Planning.

SPP 2.5 Guidelines detail planning requirements for rural-zoned land, and what to consider in respect of potential land use, and development controls associated with mixed land uses allowed within rural-zoned land, such that differing uses can be accommodated in accordance with region and local scheme requirements.

DC 3.4 details appropriate standards for rural subdivisions being planned for other purposes (i.e. not rural living purposes), including, but not limited to, the use of land for processing works and buffers, public utilities, and rehabilitation of degraded land.

2.4 State Planning Policy 3.7 – Planning in Bushfire Prone Areas

State Planning Policy 3.7 (SPP 3.7) – Bushfire (WAPC, 2024a) and the associated Planning for Bushfire Guidelines (WAPC, 2024b) have been developed to implement effective risk-based land use planning and development to firstly avoid bushfire risk, but where unavoidable aims to preserve life and reduce the impact of bushfire on property and infrastructure (WAPC, 2024a).

SPP 3.7 applies to all strategic planning, subdivision and development applications in bushfire prone areas, and aims to support development through an assessment of bushfire hazard. The Policy Objectives of SPP 3.7 are to (WAPC, 2024a):

- Prevent any action that would increase the bushfire risk. If that's not possible, manage and reduce the risk to a safe and acceptable level for the people, property, and infrastructure in that specific area.

- Enhance a community's ability to withstand bushfires by providing suitable infrastructure for both emergency services and residents to use during an event.
- All new development must be built to withstand the more intense and frequent bushfires that are a result of climate change.
- Prioritise keeping native plants to protect the environment, preserve biodiversity and maintain the natural beauty of the landscape.

The Planning for Bushfire Guidelines (WAPC, 2024b) provides guidance on the implementation of SPP 3.7, with the purpose of the guidelines being:

- Specifying the requirements to address SPP 3.7 at each stage of the planning process
- Establishing suitable land use, building design, and construction methods, as well as the exact location of buildings, within areas officially identified as being at risk of bushfires.
- Providing an assessment framework to demonstrate compliance with the bushfire protection criteria.

In accordance with SPP 3.7 and the associated guidelines, a dedicated Bushfire Management Plan (BMP) has been prepared in support of the proposed development (Bushfire Safety Consulting 2026). The BMP should be read in conjunction with this ESR.

2.5 State Planning Policy 5.4 – Road and Rail Noise

State Planning Policy 5.4 – Road and Rail Noise (SPP 5.4; WAPC 2019) and the associated implementation guidelines have been developed to minimise the adverse impact of road and rail noise on noise-sensitive land-use and/or development within specified trigger distances of strategic freight and major traffic routes (WAPC 2019).

SPP 5.4 applies to the preparation and assessment of planning instruments, including region and local planning schemed, where there is proposed noise-sensitive land-use (such as rural-residential development) within the policy's specified trigger distances. The objectives of SPP 5.4 as they relate to the proposal are to:

- Protect the community from unreasonable levels of transport noise
- Protect strategic and other significant freight transport corridors from incompatible urban encroachment
- Ensure transport infrastructure and land-use can mutually exist within urban corridors
- Ensure that noise impacts are addressed as early as possible in the planning process; and
- Encourage best practice noise mitigation design and construction standards.

With specific regard to the proposal, a portion of the site is located within the specified trigger distance (200 m) to a freight rail line running to the south east of the site. Generally, it is considered that the proposed Scheme Amendment for rural residential zoning is compatible with the adjacent transport corridor for South Western Highway, recognising that there are approximately seven other existing rural residential lots within the Bella Vista Estate also located within the specified trigger distance of South Western Highway.

Notwithstanding, noise considerations and mitigation measures will be addressed as part of the future subdivision and development of the subject site. As such a Noise Management Plan outlining the proposed noise mitigation measures will be provided as part of a subsequent subdivision application.

3 Existing Environment

3.1 Historic and Surrounding Land Use

Historical aerial imagery at the site is available from April 2000, at which point the site had been previously partially cleared for pastures. A blue-gum plantation was planted to the south of the site between 2005 and 2009, which was subsequently harvested in 2014 (a duration of between 5 and 9 years). The plantation currently to the south of the site was planted between 2014 and 2017.

The site is bordered by rural residential lifestyle properties to the north and east opposite Bella Vista Road. Priority agricultural land is located to the south and west of the site (including the balance of Lot 101), however it should be noted that the only agricultural activity occurring in this area is the broader blue-gum plantation to the south and south-west. A large dam is located immediately west of the site (Figure 2)

3.2 Topography, Landform and Soils

Topography at the site ranges from approximately 270 m Australian Height Datum (AHD) in the north west, to approximately 285 m AHD in the south east (Figure 3).

The site is located in both the Crowea and Pemberton soil units, as mapped by Churchward (1992) (Figure 4, Table 1).

Table 1: Soil landform units (Churchward, 1992)

Unit	Landform	Soils
Crowea (Cry)	Ridge crests with gentle slopes and ridges.	Dominant soils have yellow duplex soils with a pale grey-brown loamy sand to sandy loam A horizon above a mottled clay B horizon (Churchward and MacArthur, 1992).
Pemberton (PM)	Valleys 20m to 40m deep with flat or gently sloping floors.	Most extensive soils are red and some yellow earths with a gravelly sandy loam to sandy clay loam surface horizon. There are areas of red duplex profiles which also have a light brown, gravelly sandy loam.

Soil investigations undertaken by West Soil and Water (2024) generally identified the soil profile to comprise sandy brown topsoil overlying Gravels/Course Sand loam, which was often underlain by rock laterite in central areas of the site or clay loams. This is consistent with the soil landform unit description presented above.

The soil is well-drained, and the acid sulfate soils risk at the site is classified as C4 - Extremely Low Probability / Very Low Confidence (CSIRO 2014).

3.3 Hydrology

3.3.1 Groundwater

Depth to groundwater across the site was assessed as a part of a Site and Soil Evaluation undertaken for the site by West Soil and Water (2024). Groundwater was measured as being greater than 6 m below ground level in the low-lying northern portion of the site.

Nearby groundwater bores listed on the DWER information reporting Tool do not provide significant depth to groundwater information. However, drill depth of bores in the area are noted to range from 18 to 25 m below ground level (West Soil and Water 2024).

The site is not located within a proclaimed groundwater area under the *Rights in Water and Irrigation Act 1914* (RIWI Act), and therefore a license is not required to take groundwater from the site, under the RIWI Act.

3.3.2 Surface Water and Wetlands

No perennial or seasonal surface water features are present on site. It should be noted that all surface water resources within and in proximity to the site, including for agricultural use, are fully allocated (DWER 2023). Surface water flows are anticipated to follow topographic contours in a westerly direction (Figure 3), towards the large dam located on Lot 41.

There are no mapped wetlands within or in proximity to the site (Landgate 2026).

Farm dams are located to the west (generally >100m) and east (approximately 50m) of the site. No dams are present onsite.

The site is located within the Lefroy Brook Catchment Area which is a surface water Public Drinking Water Supply Area (PDWSA). No priority level is assigned to this area (West Soil and Water, 2024).

3.4 Vegetation and Flora

3.4.1 Pre-European Vegetation

Pre-European vegetation within Western Australia has been mapped at a state level by Beard (1990) as vegetation system associations, and by Heddle et al (1980) across the swan coastal plain and south west as vegetation complexes.

One vegetation system association has been mapped within the site, being Nornalup 3. This vegetation is described as a medium forest of *Eucalyptus marginata* (Jarrah) and *Corymbia calophylla* (Marri). Approximately 148,209 ha (89.35 %) remains of this vegetation within Western Australia, and approximately 35,500 ha (94.06%) remains within the Shire of Manjimup.

Two vegetation complexes have been mapped within the site. This vegetation, their descriptions and the percentage of their original extent remaining are presented in Table 2.

Table 2: Vegetation complexes

Vegetation complex	Description	Extent remaining in the South West	Extent remaining in Shire of Manjimup
Pemberton complex (PM1)	Tall open forest of *Eucalyptus diversicolor* with mixtures of *Corymbia calophylla* on valley slopes and low forest of *Agonis juniperina to Banksia seminuda to Callistachys lanceolata* on valley floors in the perhumid zone.	64.58%	61.66%
Crowea Complex (CRy)	Mixture of low open forest of *Casuarina obesa* (Swamp Sheoak) and open woodland of *Corymbia calophylla* (Marri) - *Eucalyptus wandoo* (Wandoo)	72.04%	71.85%

Vegetation complex	Description	Extent remaining in the South West	Extent remaining in Shire of Manjimup
	- *Eucalyptus marginata* (Jarrah). Minor components include closed scrub of *Melaleuca* species and occurrence of *Callitris pyramidalis* (Swamp Cypress).		

The EPA uses vegetation complexes as the basis for regional representation of biodiversity and has an overall objective to seek retention of at least 30 % of the pre-clearing extent of each ecological community (EPA 2015). Both vegetation complexes are considered to have extents remaining well above the targeted 30 % threshold.

Pre-European vegetation mapping is displayed in Figure 5.

3.4.2 Conservation Significant Flora and Vegetation

A desktop assessment was undertaken to determine the potential for conservation significant flora and vegetation to occur within the site. Based on a search of the Department of Biodiversity and Conservation and Attraction's (DBCA) Naturemap database, DBCA's Threatened Ecological Communities data layer (DBCA-038), and the Commonwealth's Protected Matters Search Tool, four threatened flora, six priority flora, and no conservation significant ecological communities were identified to potentially occur within 10 km of the site boundary (Appendix 1). Of these species, none were considered likely to occur within the site, based on the known site conditions (Bushfire Safety Consulting 2026), and these species' habitat requirements.

3.4.3 Site Inspection

As part of the development of a Bushfire Management Plan (BMP; Bushfire Safety Consulting 2026), an inspection was undertaken of the site's native vegetation in April 2020.

The majority of the site consists of completely cleared pastures, with an isolated stand of degraded vegetation within the centre of the site which covers approximately 2.9 ha. This vegetation was identified to comprise a mature and regrowth open forest dominated by rough-barked eucalypts (namely Jarrah and Marri), with little to no understory present (Bushfire Safety Consulting 2026).

3.5 Fauna and Habitat

A desktop assessment was undertaken to determine the potential for conservation significant fauna and fauna habitat to occur within the site. Based on a search of the DBCA's NatureMap database and the Commonwealth's Protected Matters Search Tool, eight threatened, 11 specially protected (including migratory), and five priority fauna species were identified as potentially occurring within 10 km of the site boundary (Appendix 1). Based on an assessment of habitat requirements, the following conservation significant species were considered to potentially occur within the site:

- *Zanda baudinii* (Baudin's Black Cockatoo) – listed as Endangered under State and Commonwealth legislation
- *Zanda latirostris* (Carnaby's Black Cockatoo) – listed as Endangered under State and Commonwealth legislation

- *Calyptorhynchus banksia naso* (Forest Red-tailed Black Cockatoo) – listed as Vulnerable under State and Commonwealth legislation

It should be noted that there are no records of the above fauna occurring within the site boundary (DBCA 2022).

Based on the absence of wetland and intact understorey vegetation, there is not considered to be any suitable habitat for Western Ringtail Possums (WRP; *Pseudocheirus occidentalis*) within the site. However, it is noted that the planting of suitable food trees and establishment of water sources in rural residential gardens has the potential to create potentially suitable habitat for the species.

Recognising the paucity of biodiversity within the site boundary, the isolated nature of native vegetation, the near absence of understory vegetation and the limited extent of this vegetation within the site boundary (approximately 2.9 ha), the site is considered to have limited value as habitat for the above species. There are no known black cockatoo roosting sites within or in proximity to the site.

3.6 Conservation Areas and Ecological Linkages

The site is located within the area subject to the South West Regional Ecological linkages project, which identifies patches of native vegetation which serve as stepping stones for ecological processes across the broader landscape (WALGA 2009). No ecological linkages are located within or adjacent to the site. Two ecological linkages run parallel with South Western Highway, approximately 3.2 km and 2.5 km west and east of the site, respectively.

The Shire of Manjimup's Natural Environment Strategy (2008) identifies Natural Resource Assets across the Shire, which are to be protected and enhanced. While the report does not identify specific sites which may represent Natural Resource Assets, these are defined as natural resources such as biodiversity, agricultural land, and remnant vegetation. Noting the degraded nature of remnant vegetation on-site (Section 3.4) and the unsuitability of the land for agricultural purposes (Section 4), the site is not considered to be a Natural Resource Asset.

Part of Lot 6 located approximately 600 m south of the site, is zoned as Parks and Recreation under the Shire of Manjimup LPS. While Lot 6 is currently vested as regular Freehold land, the lot's partial zoning as a reserve precludes some development from taking place, as per the scheme text. No other conservation reserves are located in proximity to the site.

The site does not contain any Environmentally Sensitive Areas (ESAs), as mapped by DWER (Landgate 2026). It should be noted that ESAs are only applicable in the context of clearing native vegetation, where the exemptions for clearing vegetation under the *Environmental Protection (Clearing of Native Vegetation) Regulations 2004* do not apply.

3.7 Heritage

3.7.1 Aboriginal Heritage

Based on a search of the Department of Planning, Lands and Heritage (DPLH) Aboriginal Heritage Inquiry System, there are no known Registered Sites of other Aboriginal Heritage Places within the site boundary. The nearest registered site (Place ID: 5772; Manjimup) is located approximately 3.5 km south east of the site, and comprises artefacts / scatter, and camp.

3.7.2 Other Heritage

A review of the State Heritage Office's InHerit database and the Shire of Manjimup Municipal Heritage Inventory (SoM, 2008) identified no non-aboriginal heritage places within or in proximity to the site. The nearest non-aboriginal heritage place (Sproge's Tree; Place Number 18904) is located approximately 2 km north east of the site. Sproge's tree is listed under the Shire of Manjimup's Municipal Heritage Inventory as an Aesthetic and Historic site in Poor Condition.

4 Potential Impacts and Environmental Response

4.1 Vegetation and Flora

4.1.1 Potential Impacts

There is approximately 2.9 ha of native vegetation within the site that may be subject to clearing, to facilitate the construction of buildings and establishment of Asset Protection Zones (APZ's) for bushfire mitigation purposes. This clearing is not anticipated to be deleterious in nature.

4.1.2 Proposed Management

Building envelopes can be sited within the proposed development to minimise the extent of clearing required for the purpose of bushfire hazard mitigation. For example, APZs buffering from building envelopes can be designed to overlap, where possible. Additionally, fire service access routes can be strategically located to correlate to the location of firebreaks as required under the Shire of Manjimup Firebreak and Fuel Hazard Reduction Notice 2022/2023, thereby limiting the duplication of clearing in these areas (Bushfire Safety Consulting 2026).

The majority of clearing is anticipated to be required to establish and maintain APZs around building envelopes. This clearing need only be undertaken to the extent required under Schedule 1 of the Guidelines for Planning in Bushfire Prone Areas (WAPC 2024b): Standards for Asset Protection Zones. This schedule allows for the retention of 15 % canopy cover for trees greater than 6 m in height.

Vegetation potentially subject to clearing comprises isolated patches of degraded forest, with little to no understorey remaining. On this basis, impacts to flora and vegetation associated with the proposed development are not anticipated to be significant.

4.2 Fauna and Habitat

4.2.1 Potential impacts

There is approximately 2.9 ha of potential habitat for native fauna within the site (including for black cockatoos), that may be subject to clearing. This clearing is note anticipated to be deleterious in nature.

4.2.2 Proposed management

Vegetation within the site is largely devoid of understory, thereby limiting the vegetation's potential as habitat for native terrestrial fauna. Faunal movement to and within the site is limited by the vegetation's relative isolation. The vegetation exists as an isolated patch, separated from other stands of vegetation by either pastures or blue-gum plantation. While this habitat may have function as an ecological stepping stone between larger stands of higher quality habitat (such as at Lot 6 to the south of the site), this value is anticipated to be retained post-development.

It should also be recognised that implementation of the proposed development may enhance habitat value for native fauna. For example, the installation of plants along Bella Vista Road that are known black cockatoo foraging species will be considered at subdivision, and the establishment of gardens and potentially new water sources may provide habitat for a broader array of fauna species.

5 Land Capability

5.1 Priority Agricultural Land

The site is currently zoned as Priority Agriculture under the Shire of Manjimup LPS No. 4, the purpose of which is to:

'…provide for the sustainable use of high quality agricultural land, particularly where water resources exist, preserving existing agricultural production and allowing new agricultural production by securing suitable land and water resources.'

To inform a prospective rezoning of the site and surrounding area to enable rural residential development, a dedicated Land Capability Assessment was undertaken of part of Lot 42 (now Lot 101), which included the site (Ashley Prout & Associates 2006; Appendix 2). The Land Capability Assessment was undertaken to assess the potential for the land to support both agricultural activities and rural residential development with on-site effluent disposal.

Considering the site's extent, existing land use, the definition of prime agricultural land, and the applicability of relevant legislation, the assessment concluded that the site does not fulfil the requirements to be considered prime agricultural land, or as having a high priority for agriculture (Ashley Prout & Associates 2006; Appendix 2).

Since the site-specific Land Capability Assessment was undertaken, regional land capability mapping has been undertaken by the Department of Primary Industries and Regional Development (DPIRD 2026), based on soil landscapes. The mapping categorises land across the south west of Australia by its potential to support five broad land uses, including annual horticulture, dryland cropping, grazing, perennial horticulture, and vineyards. The land's capability to support each land use within the soil units mapped on-site (Crowea and Pemberton; section 3.2; Figure 4) is presented in Table 3 below.

Table 3:Mapped Land Use Capability by Soil Unit (DPIRD 2026)

Land Use	Soil Unit (As per Churchward 1992)	
	Crowea (Cry)	Pemberton (PM)
Annual horticulture	>70% of the land has moderate to very high capability	50-70% of the land has moderate to very high capability
Dryland cropping	>70% of the land has moderate to very high capability	50-70% of the land has moderate to very high capability
Grazing	>70% of the land has moderate to very high capability	50-70% of the land has high to very high capability
Perennial horticulture	50-70% of the land has high to very high capability	50-70% of the land has high to very high capability
Vineyards	50-70% of the land has high to very high capability	50-70% of the land has high to very high capability

DPIRD mapping indicates that for the Crowea soil unit, >70% of the land has a moderate to very high capability for annual horticulture, dryland cropping and grazing. It is important to note however that this soil unit occupies only 87 % of the site, and when currently vegetated land is also considered, only approximately 3.3 ha of the site could be considered to align with this classification.

It is considered unlikely that 3.3 ha of land is of a sufficient extent to support economically viable agricultural activity, at this location.

DPIRD states that land capability and land quality mapping are only a starting point for assessing particular areas of land, and that due to the scale of mapping, on-ground assessments are needed to identify characteristics of the parcels of land (DPIRD 2022). Individual areas may perform better or worse than the land capability and land quality maps suggest, depending on seasons, soils and management (DPRID 2022). Further, water (including quality and availability) is not considered as part of the assessment (DPIRD 2026).

No perennial or seasonal surface water features are present on site. It should be noted that all surface water resources within and in proximity to the site, including for agricultural use, are fully allocated (DWER 2026). No surface water is available to support agricultural activities within the site.

Further site-specific information, including information collected as a part of an on-ground assessment, is available within the Site and Soil Evaluation report prepared by West Soil and Water (2024), which should be read in conjunction with this report.

5.2 Rural Residential Development

The potential for the site to support rural residential development was considered as a part of a Land Capability Assessment undertaken by Ashley Prout & Associates (2006; Appendix 2). In considering erosion risk, ease of excavation, the potential for water logging and flooding, slope instability, and salinity, the assessment determined that the site generally has a low risk in supporting house and road construction (Ashley Prout & Associates 2006; Appendix 2).

Most recently, a Site and Soil Evaluation was undertaken by West Soil and Water (2024) to determine the ability for the site to support rural residential development. The assessment was undertaken based on the risk framework of AS/NZ 1547 On-site Domestic Wastewater Management and with reference to the Government Sewerage Policy (DPLH 2019, now State Planning Policy 2.9: Water; WAPC 2025), and focused on the site's suitability for onsite wastewater management.

Overall, it was concluded that the site is capable of receiving the estimated volumes of wastewater associated with rural residential development, and that the site can accommodate onsite sewage disposal with no buffers breached. Other key findings include:

- Minimum groundwater depth was recorded as 6 meters below ground level – much greater than the minimum 2 m distance stipulated within the Water Guidelines (WAPC 2025).
- Phosphorus retention and absorption is high, which increases the potential for additional nutrients to be absorbed prior to infiltrating to groundwater
- Sufficient space is available for treated sewage application within each proposed lot, determined as a maximum required area of 257 m^2 utilising secondary treatment.

Most notably, rural residential development exists immediately north of the site, and to the east of the site opposite Bella Vista Road. These land uses have successfully been implemented in areas with near identical environmental conditions, including the same soil types, topography, landscapes, and amenity values (see section 6). There is no evidence to suggest that the site's use for rural residential purposes would be any less successful than those already implemented in immediate proximity.

6 Landscape Assessment

Section 5.36.4.1 of the Shire of Manjimup scheme text requires a landscape assessment to be undertaken of land which a proponent has requested to be rezoned as “Rural Residential”. The Landscape Assessment is to include an analysis of slopes, vegetation cover, skylines, vistas, stream environs and identifiable natural features.

6.1 Slopes

Topography across the site ranges from approximately 270 m AHD in the north west, to approximately 285 m AHD in the south east. The site slopes gently downhill to the west, towards a large artificial dam located on Lot 41.

A site inspection undertaken to inform the site’s BMP identified these slopes as being no greater than 5 degrees (Bushire Safety Consulting 2023).

6.2 Vegetation cover

The nature of development proposed for the site means that substantial opportunity exists to retain and enhance flora and vegetation values, where bushfire constraints permit. Native vegetation is only anticipated to be cleared to facilitate the construction of buildings, and for APZ’s. . Vegetation comprises a mixture of native canopy trees including Marri, Jarrah and Karri, which is consistent with the bushland environs of the broader Manjimup area (Heddle et al 1980; Beard 1990). It is anticipated that the paucity of understory vegetation may enable greater use of these vegetated areas by the site’s future residents.

The southeast of the site is located on an elevated rise, providing views of reserved vegetation on Lot 6 approximately 600 m to the south, as well as minor patches of native vegetation around the dam to the west and rural residential properties to the north.

6.3 Skylines and vistas

Based on the site’s accessibility from Bella Vista road, building envelopes across the site are likely to be located on the southern and eastern portions of the site, which generally corresponds to a higher topography (Figure 3). Elevated building envelopes will therefore be afforded views through retained stands of native trees, overlooking the large waterbody present on Lot 41.

Building envelopes can be strategically placed to enable the installation of additional screening vegetation between South Western Highway and the associated rail line, and future residences.

6.4 Stream environs and other natural features

There are no stream environs or other surface water features within the site. The closest surface water feature is a large dam located on Lot 41, which will provide overlooking views from the proposed residences. Stands of native trees including Marri, Jarrah and Karri will be retained on-site, supporting the natural amenity of the area.

7 Conclusion

The site is predominately cleared, with only 2.9 ha of degraded native vegetation remaining which is not considered to be conservation significant. While this vegetation may have some value as habitat for native fauna such as black cockatoos, the limited extent of clearing required to facilitate rural residential development is not anticipated to have a deleterious impact on this habitat. The retention of native vegetation in accordance with the Standards for Asset Protection Zones (WAPC 2024b) is expected to maintain the site's functionality as a stepping stone for the movement of avian fauna. Further, the installation of gardens associated with rural residential development may increase the availability of habitat for some terrestrial fauna.

From a land use perspective, the site's current zoning as priority agriculture is irreflective of its limited agricultural potential. Despite high level mapping suggesting that the site's soils may be conducive to annual horticulture crops, the site's small size (6.5ha), absence of historical agricultural activity, the presence of native vegetation, and the unavailability of unallocated surface water indicate that agricultural activities are not appropriate for the site's conditions.

In contrast, there is considered to be a low risk associated with pursuing rural residential development of the site. Depth to groundwater, the ability of soils to retain and absorb Phosphorous, and the large availability of space for treated sewage application suggest that there are no constraints to the accommodation of onsite sewage disposal. Further, rural residential land use immediately to the north and east demonstrate proof-of-concept in conditions identical to those on-site.

The landscape assessment demonstrates that the slopes, vegetation cover, skylines and vistas, stream environs and other natural features are all highly conducive to rural residential land use.

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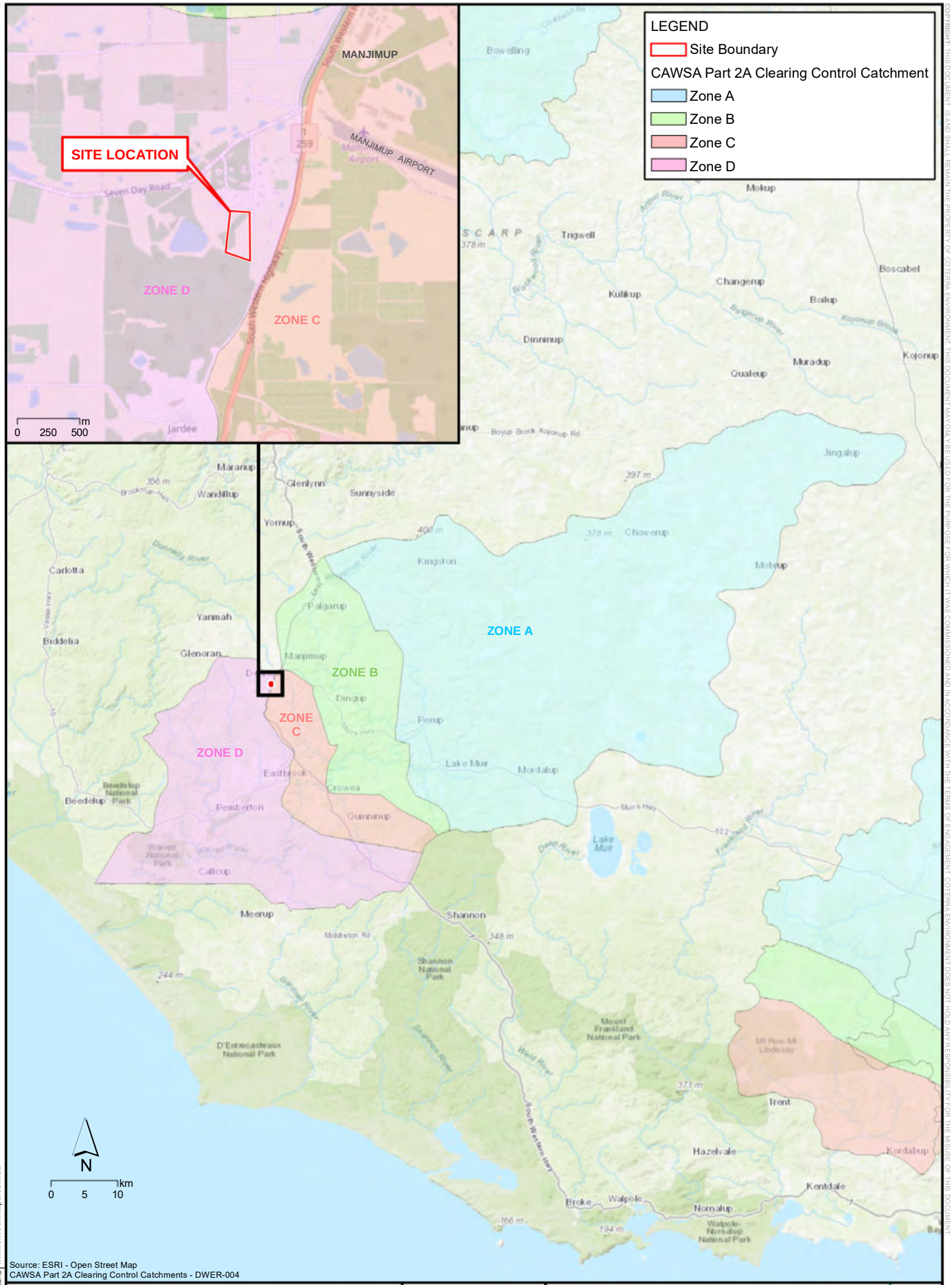
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Figures



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TBB
ENVIRONMENTAL SUMMARY REPORT
JARDEE RURAL RESIDENTIAL DEVELOPMENT

SITE LOCATION

Figure 1

C:\GIS\Jobs\CoTerra\TBBJAR03 - Jardee Rural Residential Development – ESRI\Figures\TBBJAR03_F01 Site Location_260604.mxd

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LEGEND

Site Boundary

Surrounding Land Use

- Rural Residential
- Parks and Recreation
- Priority Agriculture
- General Agriculture
- Public Purpose - Government Timber
- Enterprise
- Railway
- Highway / Main Road
- Local Road

N

0 25 50 100 150 200 m

Scale: 1:5,000 @ A3

GCS GDA 1994

WALKER ST

SEVEN DAY RD

DEMIRIS RD

BELLA VISTA RD

SOUTH WESTERN HWY

21

19

100

12

9

462

Source: Cadastre - Landgate
Orthophoto - World Imagery
Surrounding Land Use - DPLH

Source: Esri, Vantor, Earthstar Geographics, and the GIS User Community

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ENVIRONMENTAL SUMMARY REPORT
JARDEE RURAL RESIDENTIAL DEVELOPMENT

SURROUNDING LAND USES

Figure 2

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LEGEND
- Site Boundary
- Cadastre
- Railway
- Watercourse
- Contour (mAHD)

N

0 25 50 100 150 200 m

Scale: 1:5,000 @ A3
GDA 1994 MGA Zone 50

SEVEN DAY RD
STARKIES RD
SOUTH WESTERN HWY
DEMIRIS RD
BELLA VISTA RD
UNNAMED (P)

280 285 290 265 280 255 260 275 290 280 270 260 275 260 265 270 255 265

Source: Cadastre - Landgate, 2023
Orthophoto - Nearmaps, 21.02.23

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ENVIRONMENTAL SUMMARY REPORT
JARDEE RURAL RESIDENTIAL DEVELOPMENT

TOPOGRAPHY

Figure 3

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Environmental Mapping Solutions

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LEGEND

- Site Boundary
- Cadastre
- Railway

Soil Landscape Subsystems

- PvCRy: Gravelly yellow duplex soils; jarrah-marri forest.
- PvPM: 20 to 40 m deep. Flat to gently sloping floors. Few channels. 3 to 10 deg. Smooth slopes. Red or yellow gradational soils, not calcareous with some red duplex soils.

N

0 25 50 100 150 200 m

Scale: 1:5,000 @ A3
GCS GDA 1994

SEVEN DAY RD
DEMIRIS RD
BELLA VISTA RD
SOUTH WESTERN HWY
UNNAMED (P)

23
22
16
17
21
19
18
12
11
9
10
100
41
462
101
PvPM
PvCRy

Source: Cadastre - Landgate, 2018
Orthophoto - World Imagery
Soil Landscape Subsystems - DAFWA, 13.06.13

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TBB
ENVIRONMENTAL SUMMARY REPORT
JARDEE RURAL RESIDENTIAL DEVELOPMENT

LANDFORM AND SOILS

Source: Esri, Vantor, Earthstar Geographics, and the GIS User Community

Figure 4

ENVIRONMAPS Environmental Mapping Solutions | t: 0406 590 006 | www.environmaps.com.au

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LEGEND

- Site Boundary
- Cadastre
- Railway
- Native Vegetation

Pre-European Vegetation

- NORNALUP_1144: Tall forest or Tall woodland: Mainly karri *Eucalyptus diversicolor* or *Tuart E. gomphocephala.*
- NORNALUP_3: Forest: Mainly jarrah and marri *Eucalyptus marginata, Corymbia calophylla*

Vegetation Complexes

- CRy: Crowea
- PM1: Pemberton

N

0 5 10 20 30 40 m

Scale: 1:1,500 @ A3
GDA 1994 MGA Zone 50

BELLA VISTA RD

NORNALUP_3

PM1

CRy

Source: Cadastre - Landgate
Orthophoto - Nearmaps 21.02.23
Pre-European Vegetation - DPIRD
Native Vegetation - DPIRD
Vegetation Complexes - DBCA

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VEGETATION

Figure 5

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Appendix 1 Database Search Results

Table 4: DBCA Naturemap database search results (2023). CD: Conservation dependant. CR: Critically Endangered. EN: Endangered. OS: Other Specially Protected. V: Vulnerable. P: Priority

TAXON	CLASS	CONS	KINGDOM
Phascogale tapoatafa subsp. wambenger	MAMMAL	CD	Animalia
Cacatua pastinator subsp. pastinator	BIRD	CD	Animalia
Pseudocheirus occidentalis	MAMMAL	CR	Animalia
Bettongia penicillata subsp. ogilbyi	MAMMAL	CR	Animalia
Calyptorhynchus latirostris	BIRD	EN	Animalia
Calyptorhynchus baudinii	BIRD	EN	Animalia
Myrmecobius fasciatus	MAMMAL	EN	Animalia
Caladenia christineae	MONOCOT	EN	Plantae
Falco peregrinus	BIRD	OS	Animalia
Deyeuxia inaequalis	MONOCOT	P1	Plantae
*Acacia browniana var. **	DICOT	P2	Plantae
Caladenia erythrochila	MONOCOT	P2	Plantae
Hemigenia microphylla	DICOT	P3	Plantae
Stylidium roseonanum	DICOT	P3	Plantae
Tyto novaehollandiae subsp. novaehollandiae	BIRD	P3	Animalia
Calytrix pulchella	DICOT	P3	Plantae
Oxyura australis	BIRD	P4	Animalia
Hydromys chrysogaster	MAMMAL	P4	Animalia
Isoodon fusciventer	MAMMAL	P4	Animalia
Notamacropus irma	MAMMAL	P4	Animalia
Setonix brachyurus	MAMMAL	VU	Animalia
Westralunio carteri	INVERT	VU	Animalia
Calyptorhynchus banksii subsp. naso	BIRD	VU	Animalia
Dasyurus geoffroii	MAMMAL	VU	Animalia

Australian Government

Department of Climate Change, Energy, the Environment and Water

EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected. Please see the caveat for interpretation of information provided here.

Report created: 19-Jun-2023

Summary

Details

- Matters of NES
- Other Matters Protected by the EPBC Act
- Extra Information

Caveat

Acknowledgements

Summary

Matters of National Environment Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the Administrative Guidelines on Significance.

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance (Ramsar	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	None
Listed Threatened Species:	18
Listed Migratory Species:	9

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at https://www.dcceew.gov.au/parks-heritage/heritage

A permit may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

Commonwealth Lands:	6
Commonwealth Heritage Places:	None
Listed Marine Species:	12
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None
Habitat Critical to the Survival of Marine Turtles:	None

Extra Information

This part of the report provides information that may also be relevant to the area you have

State and Territory Reserves:	6
Regional Forest Agreements:	1
Nationally Important Wetlands:	None
EPBC Act Referrals:	5
Key Ecological Features (Marine):	None
Biologically Important Areas:	None
Bioregional Assessments:	None
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

Listed Threatened Species			[Resource Information]
Status of Conservation Dependent and Extinct are not MNES under the EPBC Act. Number is the current name ID.			
Scientific Name	Threatened Category	Presence Text	Buffer Status
BIRD			
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat likely to occur within area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area	In feature area
Calyptorhynchus banksii naso Forest Red-tailed Black-Cockatoo, Karrak [67034]	Vulnerable	Species or species habitat known to occur within area	In feature area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area	In feature area
Zanda baudinii listed as Calyptorhynchus baudinii Baudin's Cockatoo, Baudin's Black-Cockatoo, Long-billed Black-cockatoo [87736]	Endangered	Breeding known to occur within area	In feature area
Zanda latirostris listed as Calyptorhynchus latirostris Carnaby's Black Cockatoo, Short-billed Black-cockatoo [87737]	Endangered	Species or species habitat known to occur within area	In feature area
FISH			
Galaxiella nigrostriata Blackstriped Dwarf Galaxias, Black-stripe Minnow [88677]	Endangered	Species or species habitat likely to occur within area	In buffer area only
Nannatherina balstoni Balston's Pygmy Perch [66698]	Vulnerable	Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
MAMMAL			
Bettongia penicillata ogilbyi Woylie [66844]	Endangered	Species or species habitat known to occur within area	In buffer area only
Dasyurus geoffroii Chuditch, Western Quoll [330]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Myrmecobius fasciatus Numbat [294]	Endangered	Species or species habitat known to occur within area	In feature area
Pseudocheirus occidentalis Western Ringtail Possum, Ngwayir, Womp, Woder, Ngoor, Ngoolangit [25911]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Setonix brachyurus Quokka [229]	Vulnerable	Species or species habitat known to occur within area	In feature area
OTHER			
Westralunio carteri Carter's Freshwater Mussel, Freshwater Mussel [86266]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
PLANT			
Caladenia christineae Christine's Spider Orchid [56716]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Caladenia harringtoniae Harrington's Spider-orchid, Pink Spider-orchid [56786]	Vulnerable	Species or species habitat known to occur within area	In feature area
Drakaea micrantha Dwarf Hammer-orchid [56755]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Kennedia glabrata Northcliffe Kennedia [16452]	Vulnerable	Species or species habitat may occur within area	In buffer area only

Listed Migratory Species			[Resource Information]
Scientific Name	Threatened Category	Presence Text	Buffer Status
Migratory Marine Birds			

Scientific Name	Threatened Category	Presence Text	Buffer Status
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area	In feature area
Migratory Terrestrial Species			
Motacilla cinerea Grey Wagtail [642]		Species or species habitat may occur within area	In feature area
Migratory Wetlands Species			
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat likely to occur within area	In feature area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area	In feature area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area	In feature area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area	In feature area
Pandion haliaetus Osprey [952]		Species or species habitat likely to occur within area	In buffer area only
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat may occur within area	In buffer area only

Other Matters Protected by the EPBC Act

Commonwealth Lands [Resource Information]

The Commonwealth area listed below may indicate the presence of Commonwealth land in this vicinity. Due to the unreliability of the data source, all proposals should be checked as to whether it impacts on a Commonwealth area, before making a definitive decision. Contact the State or Territory government land department for further information.

Commonwealth Land Name	State	Buffer Status
Unknown		
Commonwealth Land - [50956]	WA	In buffer area only
Commonwealth Land - [50304]	WA	In buffer area only
Commonwealth Land - [51529]	WA	In buffer area only
Commonwealth Land - [50961]	WA	In buffer area only
Commonwealth Land - [50963]	WA	In buffer area only
Commonwealth Land - [50301]	WA	In buffer area only

Listed Marine Species [Resource Information]

Scientific Name	Threatened Category	Presence Text	Buffer Status
Bird			
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat likely to occur within area	In feature area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area overfly marine area	In feature area
Bubulcus ibis as Ardea ibis Cattle Egret [66521]		Species or species habitat may occur within area overfly marine area	In feature area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area overfly marine area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area overfly marine area	In feature area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat likely to occur within area	In feature area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area overfly marine area	In feature area
Motacilla cinerea Grey Wagtail [642]		Species or species habitat may occur within area overfly marine area	In feature area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area	In feature area
Pandion haliaetus Osprey [952]		Species or species habitat likely to occur within area	In buffer area only
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat may occur within area overfly marine area	In buffer area only

Extra Information

State and Territory Reserves			[Resource Information]
Protected Area Name	Reserve Type	State	Buffer Status
Faunadale	Nature Reserve	WA	In buffer area only
NTWA Bushland covenant (0049)	Conservation Covenant	WA	In buffer area only
Sir James Mitchell	National Park	WA	In buffer area only
Smith Brook	Nature Reserve	WA	In buffer area only
Unnamed WA39199	5(1)(h) Reserve	WA	In buffer area only
Unnamed WA51982	5(1)(h) Reserve	WA	In buffer area only

Regional Forest Agreements [Resource Information]

Note that all areas with completed RFAs have been included.

RFA Name	State	Buffer Status
South West WA RFA	Western Australia	In feature area

EPBC Act Referrals [Resource Information]

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Controlled action				
Southern Forests Irrigation Scheme	2019/8509	Controlled Action	Assessment Approach	In feature area
Not controlled action				
Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia	2015/7522	Not Controlled Action	Completed	In feature area
INDIGO Central Submarine Telecommunications Cable	2017/8127	Not Controlled Action	Completed	In feature area
Not controlled action (particular manner)				
INDIGO Marine Cable Route Survey (INDIGO)	2017/7996	Not Controlled Action (Particular Manner)	Post-Approval	In feature area
Referral decision				
Southern Forests Irrigation Scheme Project 2 - Irrigation Pipeline Network, South West region, WA	2018/8161	Referral Decision	Completed	In feature area

Caveat

1 PURPOSE

This report is designed to assist in identifying the location of matters of national environmental significance (MNES) and other matters protected by the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act) which may be relevant in determining obligations and requirements under the EPBC Act.

The report contains the mapped locations of:

- World and National Heritage properties;
- Wetlands of International and National Importance;
- Commonwealth and State/Territory reserves;
- distribution of listed threatened, migratory and marine species;
- listed threatened ecological communities; and
- other information that may be useful as an indicator of potential habitat value.

2 DISCLAIMER

This report is not intended to be exhaustive and should only be relied upon as a general guide as mapped data is not available for all species or ecological communities listed under the EPBC Act (see below). Persons seeking to use the information contained in this report to inform the referral of a proposed action under the EPBC Act should consider the limitations noted below and whether additional information is required to determine the existence and location of MNES and other protected matters.

Where data are available to inform the mapping of protected species, the presence type (e.g. known, likely or may occur) that can be determined from the data is indicated in general terms. It is the responsibility of any person using or relying on the information in this report to ensure that it is suitable for the circumstances of any proposed use. The Commonwealth cannot accept responsibility for the consequences of any use of the report or any part thereof. To the maximum extent allowed under governing law, the Commonwealth will not be liable for any loss or damage that may be occasioned directly or indirectly through the use of, or reliance

3 DATA SOURCES

Threatened ecological communities

For threatened ecological communities where the distribution is well known, maps are generated based on information contained in recovery plans, State vegetation maps and remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species

Threatened, migratory and marine species distributions have been discerned through a variety of methods. Where distributions are well known and if time permits, distributions are inferred from either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc.) together with point locations and described habitat; or modelled (MAXENT or BIOCLIM habitat modelling) using

Where little information is available for a species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc.).

In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More detailed distribution mapping methods are used to update these distributions

4 LIMITATIONS

The following species and ecological communities have not been mapped and do not appear in this report:

- threatened species listed as extinct or considered vagrants;
- some recently listed species and ecological communities;
- some listed migratory and listed marine species, which are not listed as threatened species; and
- migratory species that are very widespread, vagrant, or only occur in Australia in small numbers.

The following groups have been mapped, but may not cover the complete distribution of the species:

- listed migratory and/or listed marine seabirds, which are not listed as threatened, have only been mapped for recorded
- seals which have only been mapped for breeding sites near the Australian continent

The breeding sites may be important for the protection of the Commonwealth Marine environment.

Refer to the metadata for the feature group (using the Resource Information link) for the currency of the information.

Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

-Office of Environment and Heritage, New South Wales
-Department of Environment and Primary Industries, Victoria
-Department of Primary Industries, Parks, Water and Environment, Tasmania
-Department of Environment, Water and Natural Resources, South Australia
-Department of Land and Resource Management, Northern Territory
-Department of Environmental and Heritage Protection, Queensland
-Department of Parks and Wildlife, Western Australia
-Environment and Planning Directorate, ACT
-Birdlife Australia
-Australian Bird and Bat Banding Scheme
-Australian National Wildlife Collection
-Natural history museums of Australia
-Museum Victoria
-Australian Museum
-South Australian Museum
-Queensland Museum
-Online Zoological Collections of Australian Museums
-Queensland Herbarium
-National Herbarium of NSW
-Royal Botanic Gardens and National Herbarium of Victoria
-Tasmanian Herbarium
-State Herbarium of South Australia
-Northern Territory Herbarium
-Western Australian Herbarium
-Australian National Herbarium, Canberra
-University of New England
-Ocean Biogeographic Information System
-Australian Government, Department of Defence
Forestry Corporation, NSW
-Geoscience Australia
-CSIRO
-Australian Tropical Herbarium, Cairns
-eBird Australia
-Australian Government – Australian Antarctic Data Centre
-Museum and Art Gallery of the Northern Territory
-Australian Government National Environmental Science Program
-Australian Institute of Marine Science
-Reef Life Survey Australia
-American Museum of Natural History
-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania
-Tasmanian Museum and Art Gallery, Hobart, Tasmania
-Other groups and individuals

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the Contact us page.

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Appendix 2 Land Capability for Re-zoning Purposes: AM & M Moltoni – Bella Vista Road – Manjimup (Ashley Prout and Associates 2006)

Land Capability for Re-zoning Purposes

Bella Vista Road

MANJIMUP

This report is for the use of the party to whom it is addressed and for no other purpose. No responsibility is accepted to any third party who may use or rely on the whole or part of this report.

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& Associates

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6.2 Plan of existing lots 12

1 INTRODUCTION

The owners of Lots 42 and 41, of Bella Vista Road, Manjimup have been refused permission to re-zone parts of their property, lot 42, from rural to special rural, to facilitate the development and sale of 13 lots and a further 2 lots in Part location 5211. Location 5211 already contains a special rural area.

The remaining part of lot 42 is to be amalgamated with lot 41.

The property was visited and inspected on 26th February 2006.

Council's refusal was based on the concept of 'priority agricultural land' definition and the need to reserve it for agricultural purposes.

This report describes the proposal and assesses the capability of the land to support such a use. The concept of 'prime agricultural land' and that of 'priority agriculture' is also discussed.

Land capability has been assessed and rating tables produced and described below including the sites ability to absorb and treat effluent

A description of potential agricultural use is given

1.1 Prime agricultural land

The concept of prime agricultural land has been discussed by Read V (1988) and Kininmonth I (2000) and can be defined as having

The most utility for agricultural purposes,

Has soils with no physical and chemical limitations ***or agricultural use,***

Has a reliable water supply for irrigation,

Is not subject to extremes of climate

The value of such land is not always obvious both from an agricultural or society point of view. Monetary and externalized values have an effect on society values as does significant public infrastructure on agricultural values. Some of these values are shown below

- *Areas that are serviced by significant public infrastructure e.g. public irrigation schemes and drainage systems*
- *Areas that are limited in area and have significant land qualities for the production of a crop type that is required to maintain the viability of a processing industry*
- *Areas that are significant for the continuity of supply of a product to domestic and export markets.*

1.2 Priority agriculture

Manjimup Shire's Local Planning Strategy key objective for defining 'priority agriculture' is to

'protect agricultural areas of State/Regional/ local significance by retaining agricultural potential. Prevent the development of uses, which are incompatible with the primary use of agriculture, both intensive and extensive. Maintain and enhance the environmental attributes of the locality including the landscape, vegetation, soils and water resources and wet land systems.'

Kininmonth (2000) describes 'productive agricultural land' *as land that is currently in production or has the potential to be productive for agricultural purposes based on soil fertility, water quality and availability, climatic factors and access to specific infrastructure and processing facilities.*

As time changes the economic viability of various enterprises, the concept of both 'prime' and 'priority agricultural' land will also change. Environmental issues such as clearing controls, spray usage, wet land protection alters the various values used initially to determine the land quality. What was considered 'prime' agricultural land once may no longer considered 'prime' if a range of environmental constraints have been more recently imposed. Similarly, 'priority agriculture' may no longer be the case if the viability or profitability change or environmental restrictions have been placed on the land such as the prevention of clearing or restricting the use of existing water supplies

Conflicting land uses are always considered an important issue when traditional agriculture land uses are alongside rural residential developments. Such issues as industrial noise, dust, chemical sprays, animal noises and dust on roofs used to collect water for domestic purposes have all been used to control land use.

In the case of the subject land, the planting of blue gums can not be considered as agriculture and this use introduces a potential conflict between uses. The land has not been used for 'priority agriculture'. Also the viability of agricultural production on such small lots (around 40 hectares) can only be considered as extremely low. Even intensive agriculture would require an irrigation water supply which does not currently exist and is doubtful if it could be established given the areas, slopes and catchment area available within the block boundaries.

When considering "prime" agricultural land or land designated as having a high "priority for agriculture" conflicting land uses take on more important roles.

Current environmental laws will also prevent further clearing on both lots.

Small lots or special rural lots already exist on exactly the same soil and landform types that occur on this parcel of land, suggesting that the value of the alternative land use is higher than the return likely from priority agriculture or 'prime' agriculture.

It is therefore suggested that the land in question does not currently fit the description of either "prime" agricultural land or land having a "high priority for agriculture".

2 LANDFORMS AND VEGETATION

The soils and landforms of this area have been previously described by Churchward HM (1992) as belonging to units comprising the Darling Plateau and units associated with minor drainage lines. Examples of both these two units, the Crowea and Pemberton units exist on the subject land.

2.1 Crowea unit (CRy)

The Crowea unit can be described as being a broad based ridge crest having gentle slopes. Soils are brown gravelly surface layers sometimes up to 100cm thick overlying a mottled clay subsoil. The dominant form of this unit on the McItoni property, has a profile consisting of a pale grey-brown loamy sand surface about 20 - 40 cms. thick overlying a yellow – yellow brown mottled clay subsoil. Exposed granite and gravels are rare.

Although this land has been extensively cleared the remaining vegetation consists of a tall open marri and jarrah forest with some karri. Scattered *Banksia spp, Persoonai spp.* and a small tree shrub layer exist.

2.2 Pemberton unit (PM)

The second major land form and soil type existing on the property is that of the Pemberton unit. This unit can be described as valleys up to about 40m deep having very flat sloping floors. This unit is 'downhill' from the Crowea unit. Soils are again duplex in nature having a gravelly sandy surface layer over lying a deep kaolinitic clay subsoil.

Vegetation would have contained tall karri forests with some marri, *Agonis spp, Banksia* pp. and a shrub layer with some *Eucalyptus rudis* in the more swampy areas.

Generally the soils and landforms can be described as good agricultural soils suited to a wide range of agricultural crops and enterprises however the lack of suitable water supplies on lot 42can hinder development for agricultural purposes.

3 LAND CAPABILITY

The ability of land to be used for different purposes depends on its qualities and the use to which it is to be put. Land qualities can be modified to suit the use and a judgment made as to the viability both economically and environmentally as to its suitability for that use. A rating table is commonly used to determine a rational method of comparing land and its various qualities. This table is set out below.

Table No 1

Land capability classes

Capability class	Degree of Limitation	General Description
1	None to very slight	Very high capability for the proposed activity or use. Very few physical limitations present which are easily overcome. Risk of land degradation is negligible
2	Slight	High capability. Some physical limitations affecting either productive land use or risk of land degradation. Limitations overcome by careful planning.
3	Moderate	Fair capability. Moderate physical limitations significantly affecting productive land use or risk of land degradation. Careful planning and conservation measures required
4	High	Low capability. High degree of physical limitations not easily over come by standard development techniques and or resulting in a high risk of land degradation. Extensive conservation requirements.
5	Severe	Very low capability. Severity of physical limitations is such that its use is usually prohibitive in terms of either development costs or the associated risk of land degradation.

3.1 Assessment table for land qualities

Assessment of land qualities is mainly subjective with very few objective measurements. Depending on the proposed land use, quality ratings can vary.

The land's ability to cope with the two main uses, the safe disposal of effluent, and housing and road construction are discussed in the report.

Some of the land's quality ratings may vary depending on the proposed use, for example, soil workability is a higher requirement for annual horticulture than it is for perennial horticulture where cultivation is not annually practiced normally.

The table below describes some of the ratings and their values.

Table No 2

Assessment ratings

Land quality description	Acceptable codes
Water logging	N nil, VL very low, L low, M moderate, H high, VH very high.
Microbial purification	VL very low, L low, M moderate, H high (depends on clay and depth to water and PRI)
Land instability	N nil, VL very low, L low, M moderate, H high (depends on slope and other geological factors)
Ease of excavation	H high, M moderate, L low, VL very low, (depends on slope and presence of rock)
Flood risk	N nil, L low, M moderate, H high
Water repellence *	H high, M moderate, L low, R very low.
Wind erosion **	H high, M moderate, L low, VL very low (H being fine to medium sandy surfaced soils)
Water erosion	H high, M moderate, L low, VL very low (Depends on slope)
Phosphorus export	H high, M moderate, L low. Depends on phosphorus retention index (PRI), site drainage etc and depth to water table and susceptibility to water erosion.
Salinity risk	NR no risk, PR partial or low risk HR high risk SL or partial saline land
pH top 10 cms	Vsac very strongly acidic, Sac strongly acidic, Mac moderate acid, Slac slightly acidic N neutral Malk moderately alkaline Salk strongly alkaline
Soil workability	G good, F fair, P poor, VP very poor, (depends on soil surface texture)
Flood risk	H high, M moderate, L low, N nil (depends on position in landscape)
Wave erosion risk	NS no susceptible, S susceptible

* Usually related to soil type and the proportion of clay in the topsoil.

** Related to slopes and surface soil types. In this case a flat slope is assumed. Sandy soils have a H or high susceptibility to wind erosion

Land capability ratings can be achieved for a range of uses. As the proposal is to subdivide to an area of approximately 1 to 1.5 hectares, it is considered that irrigated horticulture or annual horticulture will not be commercially practiced and therefore has not been assessed as an option for the land.

Land qualities usually assessed for septic tanks are listed below in Table 3 each soil unit has been rated and included in the table

Table No 3

Land qualities assessed for septic tanks

Land quality	Land capability class				
	1	2	3	4	6
Water logging	N		M	H	VH
Microbial purification	H	M	L	VL	
Land instability	N	VL	L	M	H
Ease of excavation	H	M	L	VL	
Flood risk	N		L	M	H

Capability of the land is determined by the most limiting factor

Land qualities used in the assessment

Waterlogging. Insufficient soil above the water table to purify septic tank effluent may cause problems necessitating the use of aerobic treatment units (ATU's). In this case, the water table is greater than 2m below the surface over most of the land and as such, has a high rating and the land is unlikely to be inundated for more than a day (if at all) allowing a rating of N or VL to be given.

Microbial purification ability. This quality assesses whether a soil can purify added effluent. Management options are similar to waterlogging. Any land subject to flooding or instability is not suited to septic tanks or housing developments. Purification ability is dependent on infiltration rate, soil particle size, clay and organic matter content. The soil can be described as having a moderate to moderately slow hydraulic conductivity in the loamy well structured clay with an impermeable layer at about 1 to 1.5 metres. This allows a rating of M to be given.

No infiltration measurements were undertaken; however average values can be used. Table 4 below sets out the range of infiltration rates for the more common soils of the State.

Table No 4

Soil types and infiltration rates

Soil texture	Percent clay	Typical infiltration rate mm/hr.	Normal range of infiltration rate mm/hr.
Sand	<5	50	20-250
Sandy loam	5-15	20	10-80
Loam	15-25	10	1-20
Clay loam	25-40	8	2-15
Silty clay	40-60	2	0.3-5
Clay	>50	0.5	0.1-8

...and instability. The average slope over the land is less than 5% allowing a rating of nil or N to be allocated for this attribute.

Ease of excavation. Although no deep holes were excavated, it is understood that rock or depth restrictions are unlikely to be encountered shallower than 1.5m to 2.0m allowing a rating of H or M to be given.

Flood risk. The risk of the land being inundated or flooded is extremely remote due to well distributed rainfall and the existing gentle slopes. A rating for this attribute is L. The result of placing the assessed attributes into the capability table is shown below.

Table No 5

Land capability qualities for septic tanks

Land quality	Land capability class				
	1	2	3	4	5
Water logging	N, VL				
Microbial purification		M			
Land instability	N				
Ease of excavation		H			
Flood risk	N				

The above table suggests that the over all capability of the site to handle septic tank effluent safely is rated at 2 limited by the medium ease of excavation and microbial purification. This generally low risk will vary with different blocks and sites within these individual blocks will vary. The risk is slightly higher on the Pemberton unit, however higher sites are available on the land for this use.
Table 1 above sets out the degree of limitations that may exist at some sites on this land.

The land is suitable for the treatment and safe disposal of effluent as is already occurring on adjacent blocks.

The potential use as 'lifestyle' blocks requires that the land be assessed as to its capability to support housing and road development. Land qualities measured for these purposes are set out in the table 6 below.

Table No 6

Land use rating for house and road construction

Land quality	Rating				
	1	2	3	4	5
Water erosion risk	VL-L	M	H	VH	
Wind erosion risk	VL-L	M	H		VH
Wave erosion risk	NS				S
Ease of excavation	H	M	L	VL	
Water logging	N	L-M	MH	H	VH
Flood risk			L	M	H
Foundation soundness	Good	Fair	Poor	Very poor	-
Slope instability risk	Nil	VL	L	M	H
Salinity risk	Nil	Moderate	Strongly susceptible	-	-

Capability of the land is determined by the most limiting factor.

In determining the capability of the land to support small lot developments both the Pemberton and Crowea soil units were assessed together. Obviously there are some differences between them, however sites for houses, sheds etc exist on all blocks.

Rating the land is shown as in the table No 7 below.

Table No 7

Capability for housing and road construction

Land quality	Rating				
	1	2	3	4	5
Water erosion risk		M			
Wind erosion risk					
Wave erosion risk	NS				
Ease of excavation		M			
Water logging		L-M			
Flood risk			L		
Foundation soundness	Good				
Slope instability risk		VL			
Salinity risk		Moderate			

In summary the land has a capability rating of Class 2 meaning that the land has high capability with some physical limitations affecting either productive land use or risk of land degradation. These limitations are easily overcome by careful planning.

4 SUMMARY

In summary, identifying key agricultural areas is not an easy task, however at a regional level, boundaries of such areas could correspond with ground water or surface water catchment boundaries. This will help ensure compatibility between water and land allocation processes. Also when delineating areas there is a need to manage potential conflict between agricultural and urban uses and provide buffer zones

Kininmonth (2000) stated that 'Prime' and 'priority' agricultural land would naturally include land that could be

Irrigated annual horticulture e.g. vegetable and exotic floriculture crops.

Irrigated perennial horticulture, e.g. orchards, viticulture,

Other irrigated crops and pastures, e.g. cotton, pastures.

These areas should be protected because they

Form a high proportion of the State's gross value of agricultural production,

Require a unique combination of physical resources (water climate soils) strategically located in relation to infrastructure labour services and markets,

Generate a higher value per hectare than many other agricultural land uses,

Particularly important for processing and value adding industries.

Using Kininmonth's definitions, the subject land does not fulfil any of the above requirements, either from a boundary or land use point of view.

A lack of irrigation water supply on lot 42, prevents intensive agricultural practices from being adopted. Catchment areas and lot sizes are too small to be considered for this use.

Existing lot sizes are too small for viable dry land agriculture to be an alternative use, especially considering existing environmental laws and constraints.

The land is ideally suited to small lot development as shown by the existing development. There is a need for this high value land to be used for that purpose and to further reduce potential land use conflicts between the range of uses including urban, agriculture and forestry on the fringe of the townsite.

Re-zoning of this land parcel would facilitate a more appropriate use to be made of this valuable land and satisfy the growing demand for lots of this size.

5 REFERENCES AND MATERIAL USED

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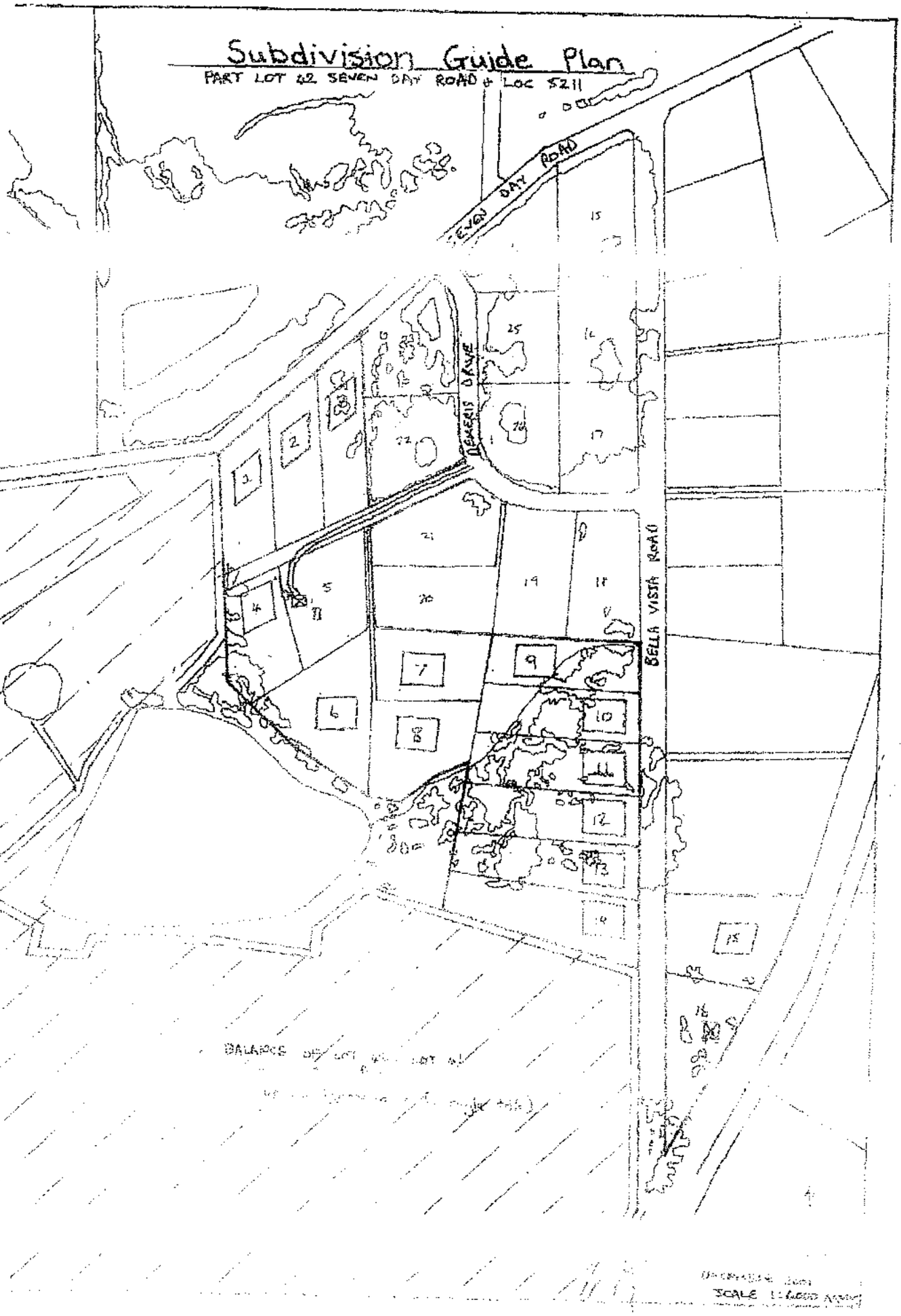
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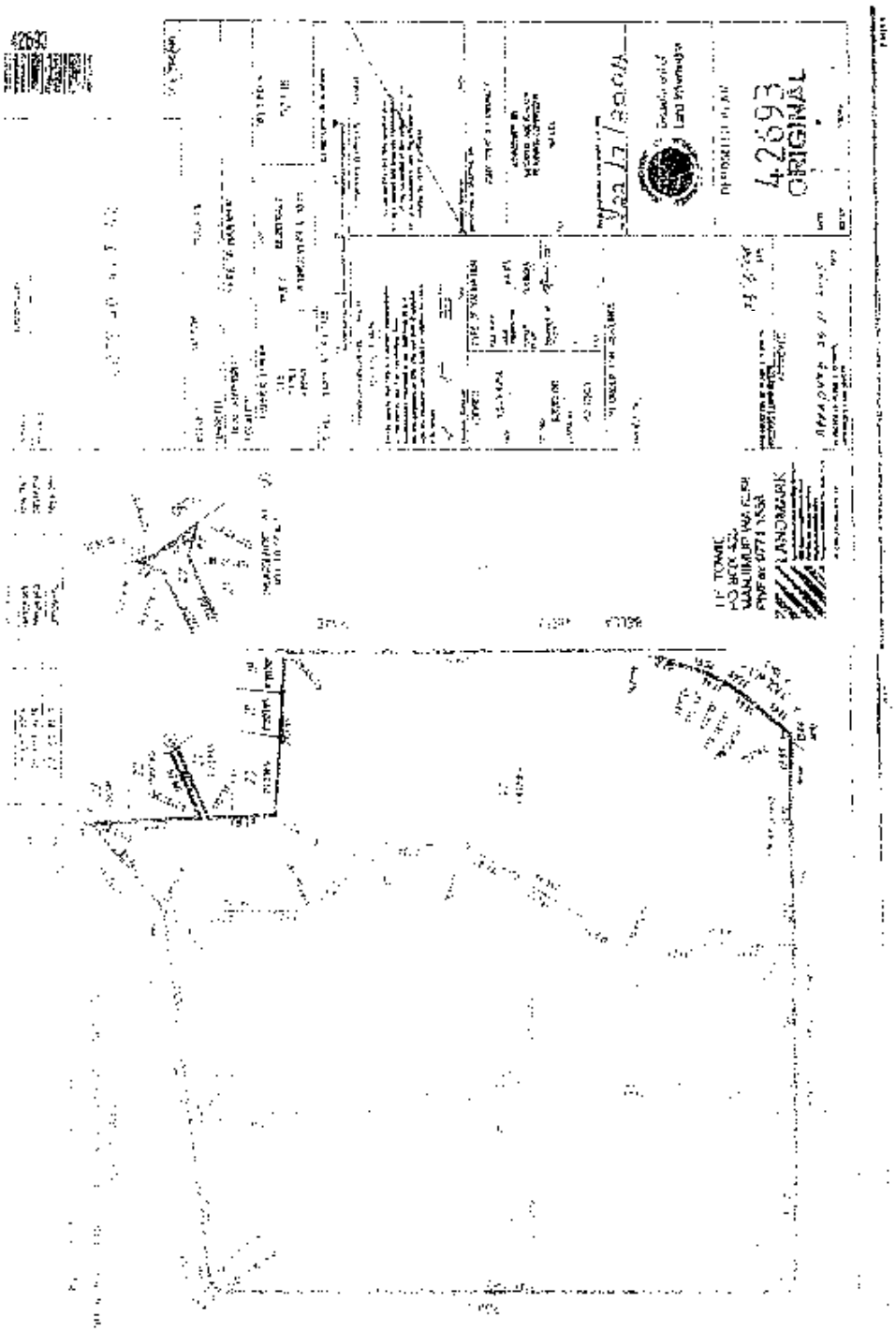
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Wells M (1987) Assessment of land capability for on-site septic tank effluent disposal. WA Dept of Agriculture Technical Report No 63. Nov 1987.

Wells MR and King PD. (1989) Land capability assessment methodology for rural residential development and associated agricultural land uses WA Dept of Agriculture Land Resource Series No 1 1989.


Subdivision Guide Plan
PART LOT 42 SEVEN DAY ROAD & LOC 5211
SEVEN DAY ROAD
DEMERIS DRIVE
BELLA VISTA ROAD
BALANCE OF LOT
SCALE

6.2 Plan of existing lots



Appendix B

SITE AND SOIL EVALUTION REPORT

WEST
SOIL & WATER

Site and Soil Evaluation

Lot 101 Demiris Drive, Jardee

Report Prepared for

5 August 2026

Project Number: 20230914_Lot 101 Demiris Drive Jardee SSE

DOCUMENT CONTROL				
Revision	**Description**	**Date**	**Authorised by**	**Issued to**
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Approval for Release

Name	Position	File Reference
Sam Mueller	Managing Director	20230914_Lot 101 Demiris Drive Jardee SSE

Signature

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Executive Summary

West Soil and Water (WSW) was commissioned by (the Client) to undertake a Site and Soil Evaluation (SSE) for a rezoning of a portion of Lot 101 Demiris Drive, Jardee WA 6258 (the site), located in the Shire of Manjimup (the Shire).

The site is located within a 'priority agriculture' land use area, with the client proposing a scheme amendment to a 'rural residential' land use for a portion of the lot. Future site access will be via an extension to Bella Vista Road.

As a part of this development, an SSE is required to assess wastewater disposal and how this should be implemented to accommodate wastewater produced on-site. The site assessment summarised:

- General definition of site class (most limiting) is CLAY LOAMS.
- The field permeability tests (undertaken at 0.5 mbgl) indicated moderate to high permeability or hydraulic conductivity of the site.
- Based on site assessment, and in accordance with the State Planning Policy (SPP) 2.9 Water, a minimum separation distance of at least 2.0 metres for the site to groundwater exists (seasonal maximum).

An assessment of the overall land capacity determined for the site is agreeable, to accommodate on-site sewage treatment and disposal. The manner in which this will occur, consistent with the SPP and AS 1547, is described in detail in Section 5 of this report. The approach for sewage management within the site includes:

Current development proposed areas :

- Setback distances are considered in this assessment (>100 m separation to farm dams).
- Depth to groundwater (assessed onsite at >6 mbgl) is not considered limiting.

Applicable to the site as a whole:

- Soils on site are classified as maximum Category 4 and have moderate to high levels of infiltration in near-surface soils.
- The use of **conventional absorption trenches systems** will be preferred at this site, with a 2.0m separation distance to groundwater required in a sensitive water resource area. The use of mounds may provide additional benefit to future lots with consideration of sewerage disposal placement also warranted.
- Sufficient space is available for treated sewage application within the proposed lot, determined as a maximum required area of 257 m^2 utilising secondary treatment.
- A suitably qualified installer should be utilised for future works.
- The site is capable of receiving the proposed volumes of wastewater, and it is considered that **the site can accommodate onsite sewage disposal** with:
    - Secondary treatment, including nutrient removal.
    - Appropriate positioning of wastewater disposal areas; and
    - Consideration of the use of mounding.
- Figure 1 and 2 presents general constraints noted, and also examples against minimum lot sizes under appropriate policies. Actual locations within this area will depend on final system and development design, and reference to setback distances in Appendix E will need to be considered.

Recommendations

Once final site plans/lot locations are developed, this SSE should be revised to ensure final plans correspond with the outcomes of this report and any decisions or conditions imposed by the Shire and/or the DoH.

Assessment of Land Application Areas in this document are completed for assessment purposes only, it is re-stated here that end-lot sizing is not provided at this time, and this SSE is in support of the scheme amendment only change only.

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1 Introduction

1.1 Background

West Soil and Water (WSW) was commissioned by (the Client) to undertake a Site and Soil Evaluation (SSE) for the rezoning of a portion of Lot 101 Demiris Drive, Jardee WA 6258 (the site), located in the Shire of Manjimup (the Shire).

The site is located within a 'priority agriculture' land use area, however the client is proposing a scheme amendment for the subdivision to a 'rural residential' land use. Future site access will be via an extension to Bella Vista Road.

As a part of this development, an SSE is required to assess wastewater disposal capability of the rezoned area, and how this should be implemented to accommodate any future wastewater that may be produced onsite.

Note: at this time, this SSE is presented as a means of displaying a general understanding of suitability to wastewater disposal within the proposed development area. Future Lots are to be determined, but for the purpose of assessment, some assumptions have been made.

1.2 Scope of Work

This SSE is undertaken to determine the capacity of the site to contain the proposed development and anticipated sewerage on-site, without compromising environmental and public health outcomes, and present the most appropriate treatment/on-site wastewater management system. In general, the following has been completed:

- An SSE based on the risk framework of AS/NZS 1547 On-site domestic wastewater management with reference to the Western Australian Planning Commission (WAPC) State Planning Policy (SPP) 2.9 (2025).

For the purpose of this report, per the SPP, this SSE is a 'general assessment' for subdivision, that is to:

- Undertake a site suitability assessment for onsite wastewater management;
- Recommend the type of onsite wastewater system for the proposed development;
- Support current approved, and future planning submissions, and as such, include information pertaining to the SPP.

Whereby:

- Final system design and placement will be the responsibility of the client and their wastewater installer, in consultation with the relevant local government authority and Department of Health (DoH) as required.

1.2.1 Objectives

- Determine capacity of the site to contain proposed development and sewage on-site, without compromising environmental and public health outcomes.
- Advise on the treatment/on-site wastewater management system and land application area.

- Implement management and monitoring options if and where required.

1.2.2 Guidance

Preparation of an SSE allows on-site sewage disposal systems to be optimally designed. It allows for the most efficient use of land by facilitating the design of a system that is tailored to the specific characteristics of the site and the development, instead of being designed on the basis of conservative or generic criteria.

All project works were undertaken in general accordance, and with reference to the following standards and guidelines:

- Health (Treatment of Sewage and Disposal of Effluent and Liquid Waste) Regulations 1974.
- Standards Australia - AS/NZS1547:2012 On-site Domestic Wastewater Management.
- Western Australian Planning Commission (WAPC) 2025. State Planning Policy 2.9 Water.

1.3 Development Details

Development details are presented in Appendix A and Figure 1**.** In summary:

- The site area (6.5 hectares) is to be rezoned from 'priority agriculture' to 'rural residential'.

1.4 Site Evaluator Details

Table 1: Site Assessor Details.

Company	**West Soil and Water Pty Ltd**
ABN	80 670 322 915
Name of Assessor	Sam Mueller
Qualifications/ Experience	Bachelor of Science (Bsc) Env Man/ Mar Sc (Murdoch University, 27/01/2010) 13+ years environmental consultancy experience/ contaminated sites assessments
Contact Details	Up to date contact information can be found at www.westsoilandwater.com.au

Table 2: Insurance Details

Insurer	Insurance	Limit	Expiry*	Policy Number
Allianz Australia Insurance Limited ABN 15 000 122 850 AFS Licence No. 234708 (Allianz)	Public Liability	$20,000,000	10/04/2027	109RN51082COM
Berkley Insurance Company ABN 53 126 559 706 AFSL 463129	Professional Indemnity	$10,000,000	15/11/2026	202111-1195 R4 BIA

Allianz Australia Insurance Limited ABN 15 000 122 850 AFS Licence No. 234708 (Allianz)	Workers Compensation	N/A	10/05/2027	WWC0008678

*At the time of reporting.

2 Site Overview

2.1 Site Description

A Site summary is provided in the table below. For the purpose of this assessment, 'the site' is referred to as the proposed development area, as outlined in Figure 1.

Table 3: Site Summary

Description	
Land Description	Mostly cleared agricultural land, including blue gum plantation and some remnant bushland.
Zoning	Current: 'Priority Agriculture' under the Shire of Manjimup Scheme No. 4 Proposed: 'Rural Residential'
Volume/Folio	The site is located in the eastern portion of CoT 2760/905
Plan/Diagram	69756
Total Area	The site (subject land) is 6.5 ha / 65,000 m^2
Street Address	The site is located in the eastern portion of Lot 101 (No 26) Demiris Drive, Jardee.
Local Government	Shire of Manjimup
Sensitive Water Resource Area?	No
Public Drinking Water Source Area (PDWSA)?	Yes Lefroy Brook Catchment Area No priority rating attached to the PDWSA
Sewerage available for the property (via Water Corporation)	No
Water Source	Scheme (proposed)
Anticipated Wastewater Volume	Sewerage (L/day) from proposed development (per proposed potential future Lot): 900 L/Day

2.2 Key Assessment Notes

2.2.1 PDWSA

It should be noted that the site is located within the Draft Lefroy Brook Catchment Area which is a surface water PDWSA. Although no priority level is assigned, the site will need to be assessed to ensure compatible land use in accordance with Water Quality Protection Note (WQPN) 25. The SPP outlines that minimum lot sizes for rural residential land in PDWSA is between one and four hectares (depending on the Priority Area). As the Lefroy Brook has no assigned priority, WQPN 25 indicates use of *Figure 1* of the protection note, whereby:

- *"Some PDWSAs have not yet had priority areas assigned via a drinking water source protection report. These appear in the department's spatial data as 'priority not assigned'. In this case, the indicative priority areas that might apply can be determined using Figure 1."*

- With reference to the Lefroy Brook Catchment Area Drinking Water Source Protection Assessment (Water Corporation, 2004) the following is noted: *"No priority classification areas for source protection or a protection zone have been assigned to the Catchment Area. Assignment of priority classification areas and special purpose protection zones will occur during the development of the Drinking Water Source Protection Plan".*

- Utilising Figure 1 (below) from the WQPN 25, and based on the *proposed* rural residential land use, it is considered here that a potential P3 rating may apply.

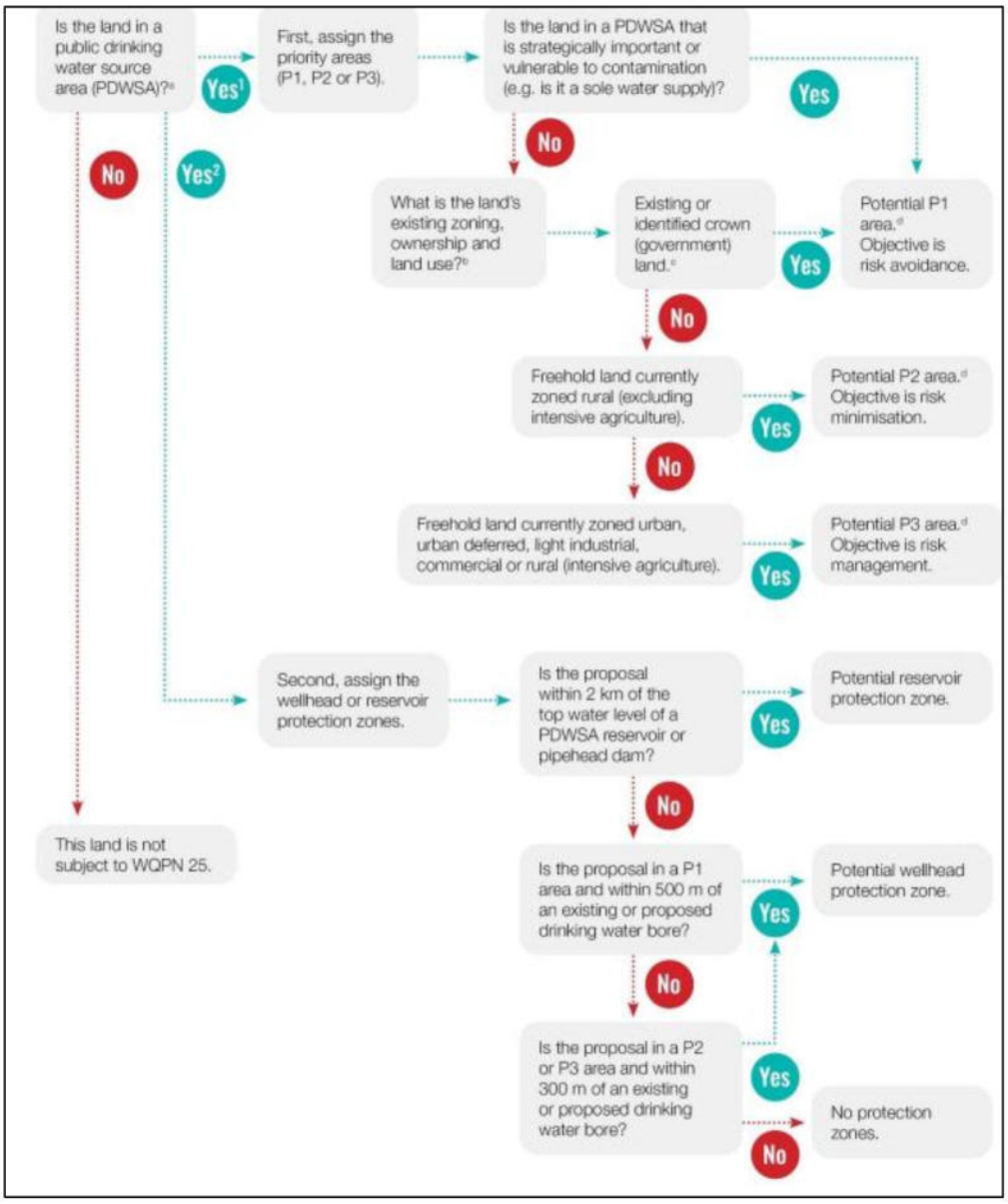


Image 1: Figure 1 from WQPN 25.

This SSE assessment will be based on the *proposed* land use (rural residential) within a P3 area, whereby, in accordance with the SPP and WQPN25:

- A minimum lot size of between 1 and 2 hectares is required, compatible with a P3 protection level PDWSA, with the following conditions:
    - Sewage disposal to be in accordance with the State Planning Policy.
    - Limited to one (1) dwelling per property (lot)
    - An average, rather than a minimum, lot size may be accepted if the following requirements are satisfied:
        - The overall density of the development (dwellings per hectare) is not increased .
        - At least 80 per cent of lots within the development exceed the minimum lot size specified for the priority area.
        - Larger lots included in the calculation of the 'average lot size' are not capable of further subdivision under the provisions of the local planning scheme.
    - Building envelopes should be located outside of Reservoir Protection Areas and Well Head Protection Zones.

2.2.2 Scheme Amendment

The Client is in consultation with the Shire of Manjimup, with a request to Amend Local Planning Scheme No. 4 – with a summary letter provided by the Shire (1 February 2022) provided in Appendix A.

It is noted that as a part of requests outlined in this letter, assessment of groundwater salinity was required. This has been included within this SSE scope, based on the following:

- The use of a drill rig for SSE soil investigations presented an opportunity to undertake a groundwater monitoring bore (GMB) installation;
- Additional assessment of groundwater adds benefit to the SSE.

This is presented in Section 2.4. Assessment of groundwater for land use capability within the decision-making framework of the request to amend the local planning scheme, is deferred to the client's consultants who are presenting this information separately.

2.2.3 Vegetation and Clearing

It is noted some clearing will be required within the proposed development area to facilitate building envelopes, including the blue-gum plantation. While not specifically outlined within this SSE, it is assumed here that any disposal areas for wastewater will be located within generally cleared areas near-to, or within building envelopes.

2.3 Key Site Characteristics

2.3.1 Site Walkover

A site walkover was undertaken by West Soil and Water which confirmed the site slope (visual only), surface lithology and surrounding land-uses. The following vegetation is noted across the site:

- Plantation blue gums cover the southern portion of the site.
- Central and norther areas are a combination of pasture grasses and weeds, with remnant forest (eucalypt) vegetation and bracken fern scrubland.

The site comprises of access firebreaks, rural fencing, and some cattle grazing. Photographs are presented in Appendix B. No surface waters were identified within the site boundary.

The vegetated areas within the north-west portion of the site display surface moisture within low-lying native vegetation areas. Winter inundation is considered likely. A culvert drain is noted in the north-east boundary of the site from Bella Vista Road – which indicates runoff into the northern portion of the site (per Figure 1 and Photographs in Appendix B).

2.3.2 Site Characteristics

Table 4 below outlines the desktop review and site observations to the existing environment and general site characteristics.

Table 4: Key Site Characteristics.

Item	Summary	Comment on Constraint Potential	Additional Comment
SSE Assessment Criteria			
Climate / Evaporation	Historical Data: Mean Rainfall: 983.4 mm Lowest mean rainfall month: Feb Highest mean rainfall month: July Mean evaporation of 1400 mm Evaporation Balance: 416.6 mm	Where evaporation exceeds rainfall, the stored water levels in the soil profile are reduced, thereby reducing the size of the land application area and generally reducing the risk of off-site effluent export, however some contaminants (e.g. nutrients) may build up in the soil profile. A lower-scale evaporation balance is noted, and high rainfall. Dependant on soil outcomes, storage of wastewater may require consideration.	Sourced from BoM (Manjimup) Department of Agriculture and Food (2003)

Exposure	Mean Solar Exposure: 7.8-26.7 $kWhm^{-2}$ (highest in December/January, lowest in June). Disposal areas can be positioned in cleared areas with some weeds and grasses.	High exposure to sun, low-moderate shade, good ventilation should assist with evapotranspiration of effluent. In general, this should have negligible impact on the winter and summer sun.	Solar exposure sourced from BoM (Manjimup).
Vegetation	The site is a mixture of remnant vegetation and pasture (northern and central areas), and blue-gum plantation within the southern areas.	Appropriate clearing will be conducted. No constraint noted.	Sourced from Landgate's Locate V5 Online Mapping Tool.
Landform/Topography	No significant curvature is noted in the proposed application area (convex or concave). and it is assumed that this will not change with any future development, whereby only building envelopes may undergo any earthworks.	Low constraint noted.	Sourced from Landgate's Locate V5 Online Mapping Tool. With site reference to National Committee on Soil and Terrain (2009). Image 1 outlines the topography in greater detail.
Slope	The site slope is generally to the north and west, with elevated areas predominately in the southern portion of the site. The northern portion within proposed Lot 1 is elevated at 277 m, with a 286 m elevation within the southern areas and eastern boundary. West of the site indicates a 269 m elevation. The site predominately slopes to the west which equates to a calculated <10% slope gradient.	No constraint noted.	Nil.
Fill	No fill material is noted within the soil horizons encountered on-site.	Some constraint (rock) noted. More detail on soils identified is presented in Section 2.5.	Nil
Rock/ gravel	Rock laterite is noted in some areas within the site at shallow depths.		Nil
Erosion Potential	No signs of erosion within the site are noted. Area has a <10% slope, moderately compacted, with some	Minimal constraint noted.	Sourced from Landgate MapViewer Plus.

	minor grasses and weeds where dense vegetation does not exist. Generally considered stable with low erosion potential. DPRD Land water erosion risk and waterlogging risk mapping indicates a low risk (3-10% of the map area with a high to extreme hazard) for the majority of the site. The western portion of the site has a moderate risk with 10-30% of the map area with a high to extreme hazard. No rainfall run-off was noted on site during the site visit.		
Soil Landscape	Pimelia Valleys System: Valleys, rises and low hills, in the west of the Warren-Denmark Southland. Loamy gravel, loamy earth, and loamy duplex. Karri-marri-jarrah forest.	Detailed site soil information presented in Section 2.5.	Sourced from Landgate MapViewer Plus.
Flood Risk	DPIRD flood risk mapping indicates a low risk of flooding with <3% of the map unit has a moderate to high flood risk. A search of the DoW floodplain mapping did not indicate any nearby 1:100 (1%) floodplain areas within 1 km of the site boundary.	No constraint noted.	Sourced from Landgate MapViewer Plus and the DoW Floodplain mapping Tool.
Groundwater / Groundwater Bores / Groundwater Abstraction Areas	WSW undertook installation of a groundwater monitoring bore (GMB) in the northern portion of the site. Further information is provided in Section 2.4. Groundwater is noted at 6 mbgl in the low-lying northern portion of the site. Significant hydrostatic pressure is noted, which indicates a possible underground spring in this area. Nearby groundwater bores listed on the DoW Water Information Reporting Tool do not provide significant depth to groundwater information. However, drill depth of bores area noted to range from 18-25 mbgl. Nearby groundwater licences are present; however no bores are noted on DoW mapping tools to be within 30m of the site boundary (Image 2)	Constraint possible within associated proposed Lots.	Sourced from DoW mapping tools and GML (2023).
Surface Waters and Wetlands	No surface water or water tributary is located within the site boundary.	Nearby Farm dams pose some constraint on proposed lots.	Sourced from Landgate MapViewer Plus.

	Two registered farm dams are located within 100 m of the site boundary.	Outlined within Figures in this report.	
Available Land Application Area (LAA)	This SSE aims to display the proposed lot(s) ability to receive wastewater, including available LAA. Locations are approximate, only with consideration to any horizontal separation distances or other known constraints. Indicative building parcels (Appendix A) have been provided, which have been considered when displaying LAAs within this SSE.	Discussed in Detail and outlined within Figures in this report.	Refer later sections and Figure 1.
Other Considerations			
Geology/ Landform	**Bedrock:** Northern Foreland metagranitic unit: Metagranitic and metamorphosed mafic rocks; Archean granite and greenstone and Proterozoic granitic and mafic rocks deformed and metamorphosed during the Albany--Fraser Orogeny. **Regolith:** Residual or relict material; includes ferruginous, siliceous, and calcareous duricrust **.** **Dominant surface soil Groups**: Gravels.	Soil discussed in Detail within this report.	Sourced from Landgate MapViewer Plus.
Acid Sulfate Soils	The site is not located within a known risk area for Acid Sulfate Soils.	No constraint noted.	Sourced from Landgate MapViewer Plus.



Image 2: Nearby DoW Groundwater Licences.

2.4 Groundwater Investigation

A GMB was installed on the 31st October 2023. Drilling was undertaken by Geo-Sonic Drilling. GMB construction details are presented in Table 5. A water sample was collected on the 22nd November 2023 with results presented in Table 6.

At the time of drilling, significant hydrostatic pressure was noted once groundwater was encountered. Follow-up sampling and water level measurement of the bore indicated groundwater was measured at surface level (0.0 m) within the bore column, indicating hydrostatic pressure remains.

With reference to soil lithology presented in Section 2.5, and on-site vegetation and landform observations, the following is considered:

- The northern portion of the site is likely underlain by a sub-surface spring, observed below clay and saprolite layers noted in site lithology between 1.5-6.0 mbgl. Groundwater was noted within sandy, loose soils, with significant hydrostatic pressure.

- Observations near this area suggest that the vegetated areas within the northern proposed lots and the dam have the potential to inundate post rainfall, which may also correlate with an expression of the noted underground spring near to the nearby farm dam.

Table 5: GMB Construction Details

Item	Depth
Well Cover – Steel Lockable Riser (yellow)	Surface
Concrete	Surface to 0.25 mbgl
Well casing	Surface to 5 mbgl
Slotted well casing	5-9 mbgl (4 m total)
Gravel material (backfilled around well casing)	4.5-9 mbgl
Bentonite seal (backfilled around well casing)	3.5-4.5 mbgl
Backfill of drilled natural materials	0.25-3.5 mbgl

Table 6: Groundwater Sample Analysis Results

Sample ID	Electrical Conductivity @ 25°C (µS/cm)	Salinity (g/kg)
GW1	398	0.19

2.5 Soil Characteristics

2.5.1 Field Investigation

The soil investigation was undertaken across the site on the 31st October 2023. A total of seven (7) test holes (six (6) test holes via drill rig, one (1) via hand auger) were completed at the site to ascertain an appropriate review of soil conditions (Figure 1). Drilling was undertaken by Geo-Sonic Drilling utilising a push probe core sampler.

A summary of investigation works is presented in Table 7. Samples were chosen to ensure representative analysis of different lithological material identified during the investigation.

Table 7: Encountered Soil Lithology

Soil Bore ID	Samples collected (Soil Bore ID – depth in mbgl)	Total Depth (mbgl)	Lithology (mbgl)
SB1	SB1-0.5 SB1-1.3	1.3	**0-0.25 mbgl:** Sandy brown topsoil **0.25-0.9 mbgl:** Gravels/Coarse Sand LOAM, red-brown. Moderately sorted. **0.9-1.3 mbgl:** Gravels/Coarse Sand LOAM, brown with some lateritic (yellow/red) inclusions. **1.3+ mbgl:** Refusal met – laterite **No groundwater encountered.**
SB2 / GMB	SB2-0.5 SB2-2.0	9.0	**0-0.25 mbgl:** Sandy brown topsoil **0.25-0.8 mbgl:** Gravels/Coarse Sand LOAM, yellow brown. Moderately sorted. **0.8-1.2 mbgl:** Sand LOAM, some clay inclusions and fine material. Limited plasticity. Red/brown. **1.2-1.3 mbgl**: Saprolite. Highly weathered and unstructured. Red/orange/brown. **1.3-1.8 mbgl:** Coarse brown SAND. Minor gravel inclusions. **1.8-4.0 mbgl:** Sandy CLAY LOAM. Some plasticity. Hardened. Red/orange/brown (mottling) Some gravel components. **4.0-6.0 mbgl:** Saprolite. Highly weathered and unstructured. Red/brown. **6.0-9.0 mbgl:** Grey coarse SAND and gravels. Saturated. Groundwater encountered below saprolite in structureless sands. **Groundwater encountered at 6 mbgl.**
SB3	SB3-2.0	3.0	**0-0.25 mbgl:** Sandy brown topsoil **0.25-1.8 mbgl:** Gravels/Coarse Sand LOAM, red-brown. Moderately sorted. **1.8-3.0 mbgl:** Sandy CLAY LOAM. Some plasticity. Hardened. Red/grey/orange grey/brown (mottling). Some gravel components. **No groundwater encountered**

SB4	-	3.0	**0-0.25 mbgl:** Sandy brown topsoil **0.25-1.0 mbgl:** Gravels/Coarse Sand LOAM, red-brown. Moderately sorted. **1.0-1.5 mbgl:** Sandy CLAY LOAM. Some plasticity. Hardened. grey/brown. Some gravel components. **1.5-1.7 mbgl:** Gravels/Coarse Sand LOAM, red-brown. Moderately sorted. **1.7-2.8 mbgl:** Sandy CLAY LOAM. Some plasticity. Hardened. grey/brown. Some gravel components. **2.8-3.0 mbgl:** Gravels/Coarse Sand LOAM, red-brown. Moderately sorted. **No groundwater encountered**
SB5	-	0.7	**0-0.25 mbgl:** Sandy brown topsoil. **0.25-0.7 mbgl:** Gravels/Coarse Sand LOAM, red-brown. Moderately sorted. **0.7+ mbgl:** Refusal met – laterite **No groundwater encountered**
SB6	SB6-1.0	2.5	**0-0.25 mbgl:** Sandy brown topsoil **0.25-0.9 mbgl:** Gravels/Coarse Sand LOAM, red brown. Moderately sorted. **0.9-1.9 mbgl:** Gravels/Coarse Sand LOAM, brown. Moderate clay inclusions. Dry, moderately structured. **1.9-2.5 mbgl**: Gravels/Coarse Sand LOAM, brown. **No groundwater encountered**
SB7	-	2.0	**0-0.25 mbgl:** Sandy brown topsoil **0.25-0.7 mbgl:** Gravels/Coarse Sand LOAM, red-brown. Moderately sorted. Some clay inclusions. **0.8-1.4 mbgl:** Gravels/Coarse Sands, red-brown. Moderately sorted. **1.0-2.0 mbgl:** Sandy CLAY LOAM. Red/brown. **No groundwater encountered**

For analysis completed, all laboratory certificates are presented in Appendix C. Samples were analysed for the following:

- Phosphorus Retention Index (PRI).
- Phosphorus Adsorption (mg/kg).
- Soil Classification by Particle Size Analysis (Sieve).
- Hydrometer and SPD analysis to “Yellow Book” specification – 4 analytes.
- pH and Electrical Conductivity EC1:5 (salinity).
- Sodicity (Exchange Sodium Percentage, ESP).

An infiltrometer was used to determine an indicative rate at which water infiltrates the soil at a depth of 0.5 mbgl immediately adjacent to Soil Bores SB1, SB2, SB4 and SB6 (results Appendix D).

In general, the site is generally underlain by the following soil horizons:

- **Surface to approximately 1-1.5 mbgl:** Loams – weakly structured (0.5-1.5 Ksat m/day)
- **1-1.5 mbgl to 2.0 mbgl:** Clay Loams – weakly structured (0.12-0.5 Ksat m/day)
- **Intermittent:** Structureless Gravels and sands (>3.0 Ksat m/day)

In addition, central areas display laterite rock at shallow depths, which will require consideration with LAA placement. No groundwater was noted to a maximum soil investigation depth of 3 mbgl. Depth to groundwater was confirmed at >6 mbgl within the installed GMB. Some mottling in soils was noted >1.8 mbgl in the northern portion of the site.

2.5.2 Laboratory Testing

Laboratory analysis results are presented in Table 8, with soil particle analysis presented in Table 9.

Soils are generally of a neutral to acidic pH, with high phosphorus absorption capability throughout the soil profiles. Moderately sodic soils, which can be dispersive, are noted – but not considered a large constraint based on minimal silt particles.

Soils, predominately, consist of coarse sands and clays. Rock was noted at a depth of 0.7-1.3 mbgl in a central portion of the site.

Table 8: Laboratory Results.

Test Pit Location	Depth (m)	pH / EC (dS/m)	Phosphorus Sorption (mg P sorbed/kg)*	PRI	Soil Particle Density (g/cm3)	Sodicity (Exchangeable Sodium %)
SB1	0.5	6.2 / 0.022	2390 (Acceptable)	>1000 (VERY Strongly Adsorbing)	2.61	4.7
	1.3	6.1 / 0.016	2440 (Acceptable)	>1000 (VERY Strongly Adsorbing)	1.99	8.7
SB2	0.5	6.3 / 0.026	3320 (Acceptable)	>1000 (VERY Strongly Adsorbing)	2.39	3.8
	2.0	4.5 / 0.118	1530 (Acceptable)	>1000 (VERY Strongly Adsorbing)	2.27	34.0
SB3	2.0	4.5 / 0.159	1800 (Acceptable)	<20 (Moderately Adsorbing)	2.25	75.6
SB6	1.0	6.1 / 0.014	2490 (Acceptable)	>1000 (VERY Strongly Adsorbing)	2.33	8.7

*in accordance with DoH "Indicative Phosphorus Sorption uptake values" for LOAMS, Acceptable Psorp is 200 mg P sorp/kg.

Table 9: Soil particle analysis.

Test Pit	Depth	Clay (<2 µm)	Silt (2-20 µm)	Fine Sand (0.02-0.2 mm)	Coarse Sand (0.2-2.0 mm)	Gravel (>2mm)
		%				
SB1	0.5	**3**	**1**	**13**	**26**	**57**
	1.3	**4**	**6**	**15**	**26**	**49**
SB2	0.5	**4**	<1	**8**	**20**	**68**
	2.0	**30**	**10**	**19**	**19**	**22**
SB3	2.0	**71**	**5**	**14**	**4**	**6**
SB6	1.0	**13**	**7**	**24**	**21**	**35**

2.5.3 Infiltration Testing

In-field infiltration testing was undertaken utilising a borehole (Talsma) Permeameter (modified method). This is undertaken to measure indicative field saturated hydraulic conductivity. Calculation is made by observing a volume of water infiltrate at scheduled intervals, calculating water flow, and determining saturated hydraulic conductivity (Ksat) of a known borehole diameter into soil.

This was undertaken immediately adjacent to four (4) soil bore locations at a depth of 0.5 mbgl, with results presented in Table 10 and Appendix D, generally consistent with AS/NZS 1547:2012 Ksat indications.

Table 10: Infiltration Results.

Test Pit	Calculated in-field Ksat (m/day)
SB2	3.14
SB1	3.33
SB4	2.94
SB6	1.96
Average	**2.84**

3 Summary of Findings

Table 11 outlines the soil constraint summary and discussion from the soil investigations. Table 11 outlines the risk assessment of site characteristics per DoH guidance.

Table 11: Summary of Soil Constraints.

Feature	Assessment	Level of Constraint	Mitigation Measures/ Notes
Rock Fragments	Shallow rock identified in the central area of the site.	High	Avoidance. The location of the LAA requires consideration in these areas.
Soil Types (most limiting)	Clay Loams – weakly structured (0.12-0.5 Ksat m/day) Soil Category 4. From approximately 1.5m + m depth.	Moderate	Shallow soils are generally sandy loams, underlain by more constraining clay loams. Consideration needs to be given to total LAA (calculated within this report). Inlay of gravel materials may increase water flow and therefore increase surface area of absorption.
Water Table Depth	Minimum groundwater depth is noted as 6 mbgl.	Low – dependant on system installed	As per the SPP – separation to groundwater in areas that are within a PDWSA area is 2.0 m. Groundwater bore installation uncovered a groundwater spring with high hydrostatic pressure in the northern portion of the site. It is considered here that minimum depths to groundwater across the site would generally be in excess of 6 m (based on higher elevation of site areas). In any event it is considered that sufficient separation to groundwater exists across the site. Assessment of the risks relating to the northern portion of the site is presented in this report, where additional consideration may be required. Some mottling of soil is noted in Sample Bores 2 and 3 (corresponding to proposed lots 2 and 3) which may indicate fluctuating groundwater levels and/or rainfall inundation in these areas.
Soil rainfall inundation	Northern portions of the site have some risk to inundation.	Moderate-high	Northern, low-lying areas of the site indicate saturated surface soils in the north-east. Winter months have the potential for this to increase and surface/subsurface saturation to occur. The location of the LAA requires consideration in these areas.
Phosphorus Retention	PRI and Phosphorus Absorption is high, which increases the potential for additional nutrients to be absorbed prior to infiltrating to groundwater.	Low	PRI and Phosphorus Absorption are noted as high. Secondary treatment will be required due to the site's location within a PDWSA, and as such the risk is considered low.
Sodic and dispersive soils	Sodicity is moderate to high.	Low-moderate	Some consideration needs to be given to soils with dispersion potential. Inlay of gravel materials may increase water flow and therefore increase surface area of absorption.
pH	Generally neutral to slightly acidic soils.	Low	Acid soils (pH <5) or alkaline soils (pH>8) may provide an unsuitable environment for plant growth, and the

			use of ameliorants (such as lime and gypsum) may then be investigated. The recorded pH is not considered to be limiting. While some acidic pH levels are noted, the site is generally well vegetated.
Electrical Conductivity (salinity)	No significant results.	Low	Moderate (range) to high (range) salinity typically inhibits or limits growth of many plant species, thereby reducing plant uptake of nutrients and increasing the risk of erosion on the LAA and potential seasonal groundwater rise. No significant result is presented here.

Table 12: Risk Assessment of Site Characteristics.

Characteristic	Level of Constraint			Assessed Level of Constraint for Site
	Low	Moderate	High	
General Characteristics				
Climate (difference between average annual rainfall and average pan evaporation, mm/year)	Excess of evaporation over rainfall in the wettest months	Rainfall approximates to evaporation	Excess of rainfall over evaporation in the wettest months	**Low**
Exposure to sun and wind	Full sun and/or high wind or minimal shading and North / North-East / North-West aspect	Dappled light East / West / South-East / South-West aspect	Limited patches of light and little wind to heavily shaded all day and South aspect	**Low**
Vegetation coverage over the site	Plentiful vegetation with healthy growth and good potential for nutrient uptake Turf or pasture	Limited variety of vegetation	Sparse vegetation or no vegetation, dense forest with little understorey	**Low**
Landslip (or landslip potential)	Nil	Low to moderate	High or Severe	**Low**
Slope Form (affects water shedding ability)	Hill crests, convex or divergent side-slopes and plains	Straight side-slopes and footslopes	Floodplains, concave or convergent side-slopes and incised channels	**Low**
Site Drainage (qualitative)	No visible signs or likelihood of dampness, even in wet season	Some signs or likelihood of dampness / Moist soil but no standing water in soil pit.	Wet soil, moisture-loving plants, standing water in pit; water ponding on surface	**Moderate**
Slope gradient (%):				
(a) for absorption trenches and beds	<5%	5-15%	>15%	**Moderate**

(b) for surface/ subsurface irrigation	<10%	10-20%	>20%	**Low**
Erosion (or potential for erosion)	Nil or Low	Moderate	Severe	**Low**
Fill (imported)	No fill at present or fill is good quality topsoil or minimal fill required.	Moderate coverage and good quality fill	Extensive poor-quality fill and variable quality fill	**Low**
Flood frequency (AEP)	Less than 1 in 100 years	Between 100 and 20 years	More than 1 in 20 years	**Low**
Private bore used for household/drinking water purposes	No bores onsite or on neighbouring properties	>30m to the nearest privet bore	<30m to the nearest private bore	**Low**
Proximity to water resources	>100m	<100m but reduced setback is supported (refer to Section 8.7.8 of the SPP)	<100m and reduced setback is not supported (refer to Section 8.7.8 of the SPP)	**Moderate-high**
Groundwater (wettest time of the year)	>2m	2.0 – 0.6m need for fill to achieve setbacks	<0.6m fill is not practical to achieve setbacks	**Low**
Land area available for LAA	Exceeds the minimum required LAA size of AS1547 or SPP.	Meets the minimum required LAA size of AS1547 or SPP.	Insufficient area available for LAA as per AS1547 or SPP.	**Low**
Rock outcrops (% of surface)	<10%	10-20%	>20%	**Low**
Site Drainage (qualitative)	No visible signs or likelihood of dampness, even in wet season	Some signs or likelihood of dampness Moist soil but no standing water in soil pit.	Wet soil, moisture-loving plants, standing water in pit; water ponding on surface	**Moderate**

Stormwater run-on/run-off	Low likelihood of stormwater run-on/run-off	Moderate likelihood of stormwater run-on/run-off, need for diversionary structures	High likelihood of inundation by stormwater run-on/run-off, diversion not practical	**Low**
Soil profile characteristics				
Soil permeability Category (AS1547)	2 and 3	4 and 5	1 and 6	**Moderate**
Profile depth	>2m	2.0-1.0	< 1.0m	**Moderate-high only in limited areas within the site bounds**
Hardpan or bedrock	>1.5m	1.5-0.6m Special design requirements and distribution techniques or soil modification will be necessary, depends on quality of treated wastewater and type of LAS	<0.6m	**Moderate – only in limited areas within the site bounds**
Presence of mottling	None		Extensive	**Moderate**
Course Fragments /gravels	< 10%	10-40%	>40%	**Moderate**
pH	6-8	4.5-6	<4.5, >8	**Low**
Electrical Conductivity (ECe)(dS/m)	<0.3	0.3-2	>2	**Low**
Sodicity ESP%	<3	6-8	>8	**Moderate - high**
Phosphorus adsorption (mg/kg)	>500	200-500	<200	**Low**

4 General Assessment

4.1 Capability of Land to Receive Wastewater

4.1.1 Sitting and Terrain

The maximum slope suitable for on-site sewage systems is dependent upon the type of system proposed and ranges from 10% to 30% (Standards Australia and Standards New Zealand 2012), with surface application systems more sensitive to slope. The topography within the investigation area (excluding localised irregularities) is noted at <10%. Low flood risk is identified in the investigation areas.

The SPP stipulates that on-site systems are not to be located within 100 m from the outer edge of a significant wetland or surface water bodies:

- Two (2) farms dams are located within 100m of the site boundary.

It is considered that sufficient space is available for the location of wastewater disposal to avoid the surface water (>100m separation) within impacted proposed lots.

4.1.2 Soils

General definition of site class (most limiting) is clay loams (0.12-0.5 Ksat m/day). The field permeability tests (undertaken at 0.5 mbgl) confirmed a moderate-high permeability in accordance with the Ksat outlined by soil category in AS1547. It is noted here that clay loams soils were generally observed +1.5 mbgl within the investigation area.

Avoidance of shallow rock is warranted in central portions of the site. The location of the LAA requires consideration in these areas.

Northern, low-lying areas of the site indicate saturated surface soils in the north-east. A culvert drain also appears to express into the site in these areas. Winter months have the potential for this to increase and surface/subsurface saturation to occur. The location of the LAA requires consideration in these areas. Manjimup is located within an area where rainfall exceeds pan-evaporation for 5 months of the year (DoH guidance – SSE Template and Information). Storage of wastewater for disposal in dryer months may be considered for the proposed lots located within these areas.

4.1.3 Groundwater

Groundwater is noted to be +6 mbgl post winter months. No evidence of surface pooling is noted within the site bounds.

A groundwater spring is evident in the northern portion of the site. Offsite, to the west near to the farm dam, surface expressions of this spring *may* occur. The location of the LAA requires consideration in these areas.

4.1.4 Minimum Lot Sizes

Based on the SPP, the following is relevant to this development (Table 13).

Table 13: SPP Minimum Lot Sizes.

Ref	Location/Landuse	Minimum Lot Size	Notes
1	Public drinking water source areas in rural, rural residential/rural living zones	Minimum lot size of between 1 and 2 hectares, compatible with a P3 protection level PDWSA.	Minimum lot size dependent upon priority area (P1, P2 and P3) and zone. Refer to Water quality Protection Note 25: Land use Compatibility Tables for Public Drinking Water Source Areas for further guidance. **With reference to Table 13, it is considered here that the total size of the proposed development area is 6.5 ha (greater than the minimum lot size).**

It is noted that the lot is being rezoned for future subdivision at a later date. Based on the minimum lot size presented in Table 13 above, and that the total area proposed to be rezoned is 6.5 ha, six (6) lots of at least a minimum of 1 ha could feasibly be created on the rezoned Site.

4.1.5 Other Horizontal Setbacks

An on-site sewage 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 where:
    - A wellhead protection zone or reservoir protection zone has not been assigned; or
    - Where existing lots would be rendered undevelopable by the wellhead protection zone;
- 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:
    - Is located down-groundwater-gradient;
    - Discharges directly into a waterway or significant wetland without treatment; and
    - Intersects groundwater; or
- Any area subject to inundation and/or flooding in a 10 percent Annual Exceedance Probability (AEP) rainfall event.

Other horizontal distances required are presented in Appendix E (to buildings and boundaries etc). It is not considered these are at risk of being breached, but it is noted that upon final development plans being drawn, these will need to be considered.

4.1.6 Noted Horizontal Constraints

The constraints limiting to this SSE and the proposed disposal area are as follows:

- **Separation distances**:

- Separation (>100 m) to Farm dams requires consideration in the placement of LAA's. Evidence that this is achievable is presented in Figure 1.

No other setbacks are noted to be breached in this assessment when considering the proposed infiltration areas.

4.1.7 Consideration of the Current Development Plan and Status

At the time of this report, the development design is provided by the client – per Appendix A. The proposed disposal area(s) discussed in this SSE and presented in relevant figures is considered as:

- The extent of available area not restricted by horizontal separations (where applicable).
- Occupies as much practical space as is available to ensure that final calculated minimum Land Application Area (LAA) can be utilised **within** this space, while maintaining horizontal distances.
- Sufficient room to ensure that once final development plans are made, appropriate horizontal setback to buildings and boundaries can be achieved (per Appendix E).

4.1.8 Results

An assessment of the overall land capacity for the site - is generally agreeable to accommodate on-site sewage treatment and disposal based on the proposed locations presented in this report and its figures. It is further noted that treatment will be **required to utilise a secondary treatment system** with nutrient removal, based on:

- Locality within a PDWSA.

The manner in which this will occur, consistent with the State Planning Policy and AS 1547, is described in the following sections.

5 Sewerage Management

5.1 Expected Sewerage Volumes

The expected hydraulic loads for various land uses are detailed in the SPP, whereby, subdivisions are assessed as:

- Land application areas for a single house (occupancy of 6 persons in a 5-bedroom house);
- 150L/per person/day = 900 L/day.

5.2 Disposal method

5.2.1 Consideration of Options

Table 14 below considers the disposal method in accordance with findings on the site from this investigation, and common disposal options (DoH).

Table 14: Consideration of disposal methods.

System	Considerations
Conventional Absorption Trench and Beds	Only requires primary effluent treatment, secondary treatment holds extra benefit. Cheaper to install than other methods and not influenced by climatic factors. Requires deep soil, generally > 1.5 m, above limiting layers (e.g., bedrock or seasonal water tables). Treatment by absorption trench may be impeded due to high % of coarse fragments. Soil supplementation may be an option to improve absorptive capacity. Sodic soils may lose permeability over life of system; larger trench lengths required. Ideal for sites with little to no constraints in terms of soil depth, rock content, waterlogging, inundation or shallow water tables.
Amended soil and Mounds	Beneficial for shallow soils, high rock contents, or highwater tables. Requires an above-ground mound for effluent absorption that contains imported sand/soil. Treatment will not be limited by soil absorption capacity, and less influenced by sodic soils as new soils can be imported. Not influenced by climatic factors.
Subsurface Irrigation	Secondary treatment is required prior to irrigation. Suitable for areas of high exposure with high evaporation rates (limited during wet season). Suitable for sites with shallow soils.

	Not suitable for areas that are seasonally inundated or waterlogged. Sodic soils may lose permeability over life of system; but sodicity generally lower in surface soils than subsoils. Can be hindered by high rock or gravel content.

In general, it is considered that **conventional absorption trenches and beds** (such as leach drains or infiltration beds) presents an appropriate system for the proposed area to be rezoned, where:

- Only requires primary effluent treatment**, secondary treatment holds extra benefit**: required secondary treatment at this site will provide extra benefit.
- **Cheaper to install than other methods, and not influenced by climatic factors**: beneficial to this development.
- **Requires deep soil, generally > 1.5 m, above limiting layers (e.g., bedrock or seasonal water tables):** appropriate for this site, where avoidance of limiting layers is undertaken.
- **Treatment by absorption trench may be impeded due to high % of coarse fragments**: some limiting coarse fragments, are noted at the site.
- **Soil supplementation may be an option to improve absorptive capacity**: Consideration of this would add extra benefit to the site.
- **Sodic soils may lose permeability over life of system; larger trench lengths required**: Sodic soils are not considered largely limiting.
- **Ideal for sites with little to no constraints in terms of soil depth, rock content, waterlogging, inundation or shallow water table**s: appropriate to this site, with consideration to groundwater needed.

With reference to Table 14, it is further considered that **Amended Soil and Mounds** may provide additional benefit regarding the northern half of the proposed lot, where:

- **Beneficial for shallow soils, high rock contents, or highwater tables:** Shallow Rock, confined, high hydrostatic pressure groundwater springs are noted within the northern half of the proposed lot.
- **Requires an above-ground mound for effluent absorption that contains imported sand/soil:** May provide benefit to lower-lying areas and lots where saturated surface soils may occur.
- **Treatment will not be limited by soil absorption capacity, and less influenced by sodic soils as new soils can be imported:** Mounds are designed to overcome limiting Category 4.
- **Not influenced by climatic factors:** Beneficial to a higher rainfall area.

5.3 Land Application Area

5.3.1 Overview

The land application area is the designated area of land within a building envelope where the effluent from a treatment system (primary or secondary) is applied into or onto the ground. Land-application systems fall into two broad categories;

- Soil absorption systems (e.g., leach drains – or absorption trenches or mounds as referred to in AS 1547).
- Irrigation systems (e.g., covered surface drip irrigation, shallow subsurface irrigation, or above ground spray irrigation).

Based on AS1547 Land application system limitations (T*able K1 of the standards*), and client preference, it is proposed that **conventional absorption trenches and beds (including mounds)** will be preferred at this site. **Secondary treatment is required at this site.**

5.3.2 Method to Determine an Indicative Size of Land Application Area

Tables F.2 and F.3 of Appendix F of the SSP outline the conversion factors and LAA calculations applicable to a single house (occupancy of 6 persons in a 5-bedroom house), with reference to the most limiting soil type. This is summarised in Table 15.

Table 15: Calculation of LAA.

Soil Category	Soil Texture	Secondary Treatment Conversion Factor	Loading Rate (L/Day)	LAA (m^2)
4	Clay Loams	0.286	900	257

Calculations are made on a Category 4 soil type, noted at the site as the most limiting soil horizon classification encountered.

5.3.3 Note to LAA

The LAA calculated in Table 15, in accordance with the SPP, is presented as a maximum space warranted to display a lot's capability to accommodate on-site disposal of wastewater and achieve DoH approval.

Final *actual* required space will be calculated based on a variety of factors, including specific design parameters of the chosen system that is installed. For this, a wastewater installer will advise.

Figure F.1 of Appendix F of the SPP provides a sample calculation for determining the land application area (LAA) for a secondary treatment system, with reference to AS1547. Utilising this example, the following is presented utilising leach drains for an indicative understanding of disposal requirements (total infiltration area required). It is noted *that leach drains have been calculated as having a 1.2 m^2 area of infiltration per m*, based on both vertical and horizontal infiltration that leach drains provide whereby:

> Land application area for leach drains (m2) = Hydraulic loading (L/day) ÷ DLR ÷ Infiltrative Area (IA) (Assuming a conservative 1.2m^2/m) where leach drains have both vertical and some lateral infiltration capability.

It is noted here that, if utilised, should the chosen leach drains have a larger infiltration area, less drains may be required. Soak wells or flat beds may provide a better alternative. **Calculations will depend on final leach drain used (to be advised by your wastewater supplier)** with a note that leach drains require separation distances outlined in Appendix E.

*Table 16 is presented here **as a guide only** for planning purposes only based on example calculation presented in Appendix F of the SPP.*

It is re-stated here that an LAA (per Table 15) of 257 m^2 is utilised in this SSE for *assessment* purposes.

Table 16: Approximate calculation of required space for leach drains with secondary treatment.

Item	Result
Hydraulic Loading (L/day)	900
/ design loading rate (20 mm/day secondary treated) = LAA (ASNZS 1547:2012)	45
/ infiltration area/m of standard leach drain (1.2 m)	1.2 m
= Area required for drainage	37.5
/ length of drain (nominal)	10 m
/number of leach drains (nominally x4) to achieve each leach drain length (rounded up)	4
Summary	4 x 10 m leach drains
Width of infiltration area required, including: Separation each side of IA of 1.8 m Separation between leach drains installed of 1.8 m including outer edge Nominal width of leach drain 0.4 m	Length of IA required: 13.6 m Width of IAA required: 10.6 m
Total available area required to install leach drains with required LAA including setbacks	**144.16 m^2**

5.3.4 Ability of Development to Accommodate LAAs

To display the proposed lot's ability to accommodate wastewater disposal, options for example LAA's are presented in Figure 2, whereby:

- Horizontal setback distances (surface water/farm dams) are **not** breached (>100m).
- Adequate space is available within each site for the maximum LAA of 257 m^2.
- An assumed number of lots is provide that allow for lot sizing of 1-2 ha.*

Assuming an installation depth of <1 mbgl, adequate separation (2 m within a PDWSA) to groundwater (>6 mbgl) can be achieved.

*this is completed for assessment purposes only, it is re-stated here that end-lot sizing is not provided at this time, and this SSE is in support of the scheme amendment only.

5.3.5 Notes

The following is noted regarding the land application area:

- This information is based on current available site outlay and should be ground-truthed on-site by the appropriate installer, with consideration made to final development plans. **Your wastewater installer should advise**.
- If leach drains are approved and utilised, re-calculation based on specific leach drains used will be warranted to determine final LAA. **Your wastewater installer should advise**.

- Land application systems in the soils outlined in Section 5 require design by a suitably qualified and experienced person. **Your wastewater installer should advise**.
- Note that setback distances from boundaries, buildings, septic tanks, trafficable areas, surface irrigation disposal area and other structures and buildings on the boundary alignment will apply dependant on the final system installed. Note Appendix E. **Your wastewater installer should advise**.

5.4 Capability of land to accommodate sewerage application.

5.4.1 Cumulative impacts

The potential cumulative impact of onsite effluent disposal considers the following:

- The site's position within a sensitive water resource area requires minimum vertical separation distances, and secondary treatment with nutrient removal.
- Based on the current development plans (Appendix A and Figure 1), horizontal setbacks to sensitive receptors are noted to have been considered.
- Based on the outcomes of this investigation vertical setbacks to groundwater can be easily achieved.
- The post new-development peak cumulative hydraulic load is estimated to be approximately 900 L per day.
- Key factors influencing how much of this hydraulic load reaches any surface water or groundwater environment and the potential cumulative impact of the attendant nutrients and other pollutants are:
    - The type of treatment system used.
    - The setback distances in place; and
    - The density of development.

The SPP indicates that approval of on-site management of sewage may set a precedent for similar proposals in the local water catchment, and that the cumulative impact should then be considered.

It is noted that the land uses surrounding the site currently consists of mixed land uses (rural residential, agricultural). Notwithstanding, the key factors that determine the impact of on-site sewage management (for the site and cumulatively in the catchment) have been addressed in this SSE (with reference to Section 4). The response to these factors in the management of the site has been based on the overarching SPP and AS1547, which has formed the basis for the SSE as a whole. **As such the specific assessment of the cumulative impact summary are not repeated within this section.**

It is noted a residential house exists within greater Lot 101, Demiris Drive. Lot 101 is located on 44.2069 ha of land and based on the same assessment criteria as the proposed lots, and land application areas for a single house (occupancy of 6 persons in a 5-bedroom house = 900L/day) – it is considered there is sufficient space available to accommodate a reduced total lot size (reduced to 37.7069 ha). No further investigation is warranted.

5.4.2 Setback distance and Application Areas

Figure 1 expresses a general (example) area where the disposal may occur with setback distances considered. However, final design will need to consider the setback distances in Appendix E.

5.4.3 Density of development

The proposed development area is presented in Section 1.3 and Appendix A. This report aims to assess the site's ability to receive wastewater, and assessment of this will be deferred to the Shire and the DoH for final assessment.

5.5 Summary of Lot Constraints

To appropriately assess constraints, in accordance with the guidance within which an SSE is presented, the following has been completed:

1. Per Figure 1, an indication of constraints that may impact the development area only, in support of the scheme amendment.

2. Per Figure 2, and in accordance with the policies that regulate SSE's – some example lot sizing in the development area, suitable in minimum lot size – to indicate the ability for wastewater disposal to be managed within known constraints.

Constraints outlined below are discussed in this report, and where relevant, presented in Figure 1 and 2.

Table 17: Summary of Constraints.

Proposed Lot	Noted Constraints/ Limitations (all Lots)	Lot-specific Constraints	This Lot is considered capable of receiving wastewater, where:
1	General definition of site class (most limiting) is clay loams (0.12-0.5 Ksat m/day). Secondary treatment systems are required. Inlay of gravel material in leach drain installations may increase water flow and surface area and should be considered.	No specific limitation noted	
2		An underground spring is noted in this area. Disruption of groundwater which is confined below saprolite layers will likely result in expression of groundwater at the surface. Western portions of the site may be subject to waterlogging/inundation of surface soils in winter months. Some soil mottling is indicated, which may indicate fluctuating groundwater levels and/or inundation via rainfall.	Avoid excavation >4 mbgl (conservatively) to avoid spring disruption. It is proposed that the wastewater disposal area is best suited in the eastern portion of the site, which is less subject to rainfall inundation and may provide further soil medium through which nutrients can be absorbed. Consideration of re-diversion of culvert drains during development should be considered to avoid additional impacts to surface soil inundation. Wastewater storage may require consideration.
3			
4		Shallow lateritic rock is noted in the central portions of the site. 100 m separation distances to nearby farm dams (surface water) encroach on	Avoid installation in central areas where rock may be present, which poses a limiting layer.
5			

		the western, and eastern portion of the proposed lot.	Eastern portions of the site are preferred, provided separation distances to farm dams are considered.

6 Conclusions

6.1 Site and Soil Evaluation

Current development plans (Appendix A and Figure 1):

- Setback distances are considered in this assessment (>100 m separation to farm dams).
- Depth to groundwater (assessed onsite at >6 mbgl) is not considered limiting.

Applicable to the site as a whole:

- Soils on site are classified as maximum Category 4 and have moderate to high levels of infiltration in near-surface soils.
- The use of **conventional absorption trenches systems** will be preferred at this site, with a 2.0m separation distance to groundwater required in a sensitive water resource area. The use of mounds may provide additional benefit within some areas of the site, however, final Lot understanding is required to provide sufficient detail. Some consideration of sewerage disposal placement is warranted to ensure the selected disposal location is appropriate around noted constraints.
- In any event, it is considered here that with the understanding of minimum Lot sizing that would apply, sufficient space is available for treated sewage application, determined as a maximum required area of 257 m^2 utilising secondary treatment.
- A suitably qualified installer should be utilised for future works.
- The site is capable of receiving the proposed volumes of wastewater, and it is considered that **the site can accommodate onsite sewage disposal** with:
    - Secondary treatment, including nutrient removal; utilised and
    - Appropriate positioning of wastewater disposal areas.

6.2 Recommendations

Once final site plans are developed, this SSE should be revised to ensure final plans correspond with the outcomes of this report and any decisions or conditions imposed by the Shire and/or the DoH.

7 Assumptions, Limitations and Liabilities

The conclusions drawn and recommendations made here have been developed on the assumption that the data collected accurately represents the conditions at the site. Uncertainties pertaining to the data collected include the following:

- West Soil and Water are working on the assumption that the client understands that submission of an application does not constitute certainty of approval. Regulating bodies, at their discretion, may request further information, including site works, which may be outside of the Scope of Work outlined in this report.
- Temporal uncertainty: site conditions/soils may not have been present in the tested medium at the time of sampling but may be present within the site at other times.
- Albeit unlikely, the potential for isolated small pockets of alternate soil types to occur elsewhere within the site cannot be fully discounted. No perfect strategy exists which can conclusively confirm the type of all soils at any site at one time.
- Groundwater depth is unknown but inferred from regional information and visual assessment of infield conditions. However, as highlighted above, uncertainties exist, and without a formal groundwater investigation the depth and/or quality of groundwater beneath the site is unknown.
- West Soil and Water takes no responsibility for the accuracy of data presented in this report (including any other reports undertaken for the site) or the assumptions or conclusions made.
- Installation and operation of a waste management system should by guided and undertaken by a suitably qualified individual/entity.
- The client will take note of separation distances presented in Appendix E once final plans are known.

8 References and Resources

The following DoH resources may provide an understanding of the application process and regulatory commitments:

- https://ww2.health.wa.gov.au/Articles/F_I/Guidance-on-applying-for-approval-of-installation-of-a-commercial-onsite-wastewater-system
- https://ww2.health.wa.gov.au/~/media/Files/Corporate/general%20documents/water/Wastewater/Site-Soil-Evaluation.pdf

Mapping tools:

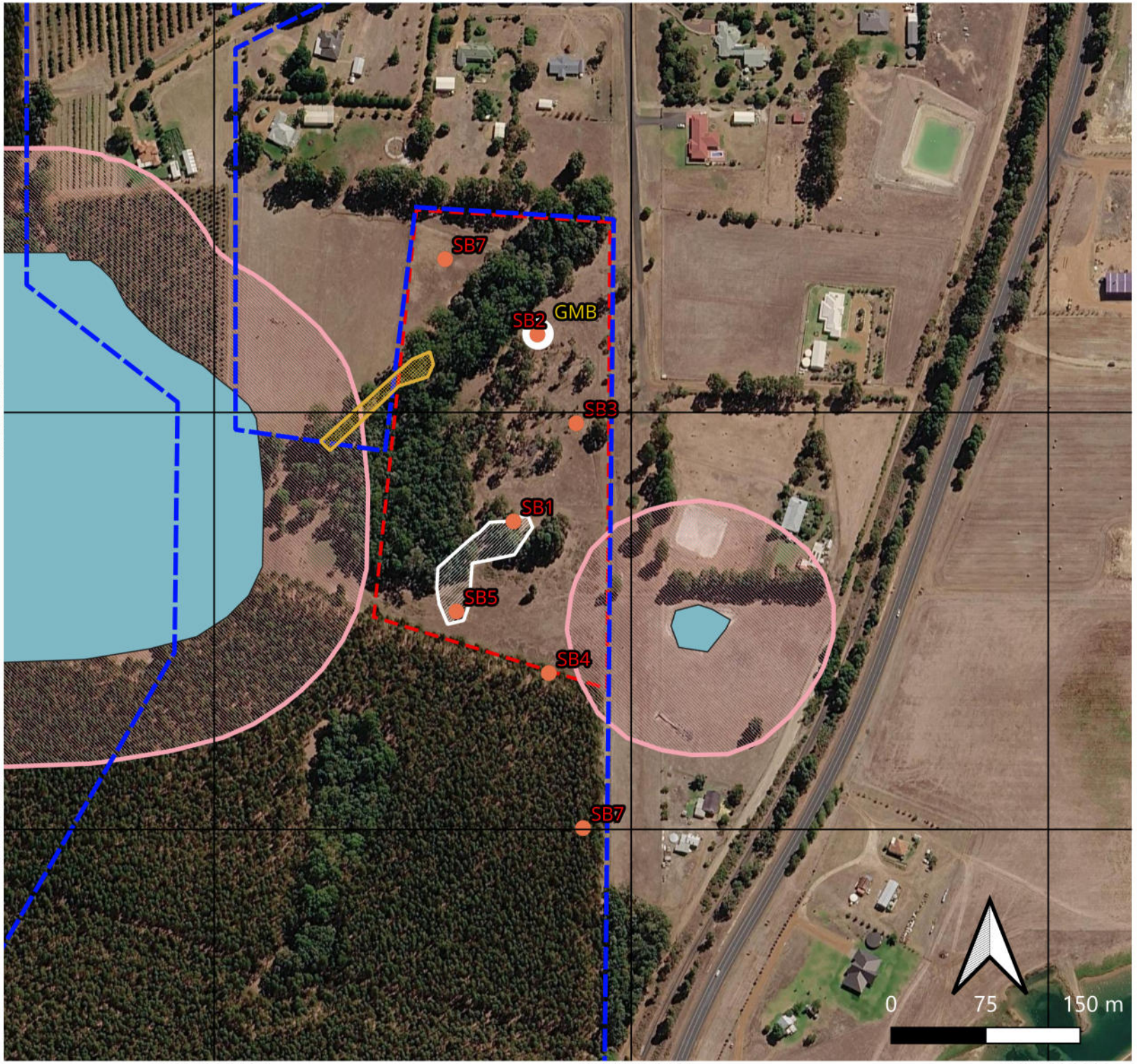
- Department of Water – Water Information Reporting tool, https://www.water.wa.gov.au/maps-and-data/maps
- Government of Western Australia, Landgate. Locate Mapping Tool. https://www0.landgate.wa.gov.au/maps-and-imagery/interactive-maps/locate

All project works were undertaken in general accordance, and with reference to the following standards and guidelines:

- Department of Health (DoH) 2019a, Guidance on Site-and-soil evaluation for on-site sewage management, Perth.
- Department of Health (DoH) 2019b, Supplement to Regulation 29 and Schedule 9 - Wastewater system loading rates.
- Environmental Protection Regulations (1987) – Environmental Protection Act 1986.
- Standards Australia 2012, AS/NZS 1547:2021. Onsite domestic wastewater management. www.standards.com.au.
- Western Australian Government (1974) Health (Treatment of Sewage and Disposal of Effluent and Liquid Waste) Regulations 1974. Version 06-m0-00, as of 01 Jul 2021.
- Western Australian Planning Commission (WAPC) 2025. State Planning Policy 2.9 Water.

Other:

- Allen DG, Jeffery RC (1990). Methods of analysis of phosphorus in Western Australian soils. Report of Investigation No. 37. Chemistry Centre (WA), East Perth.
- Department of Agriculture Western Australia (2003). Evaporation Data for Western Australia. Resource Management Technical Report No. 65.
- National Committee on Soil and Terrain 2009 Australian Soil and Land Survey Field Handbook. Third Edition, CSIRO Publishing.
- Patterson, R. (2020) Emerson Aggregate Stability Test for Wastewater: An interpretation for consultants and regulators, Technical Note: T20-1. Lanfax Laboratories Armidale NSW. 15th December 2020.



LEGEND

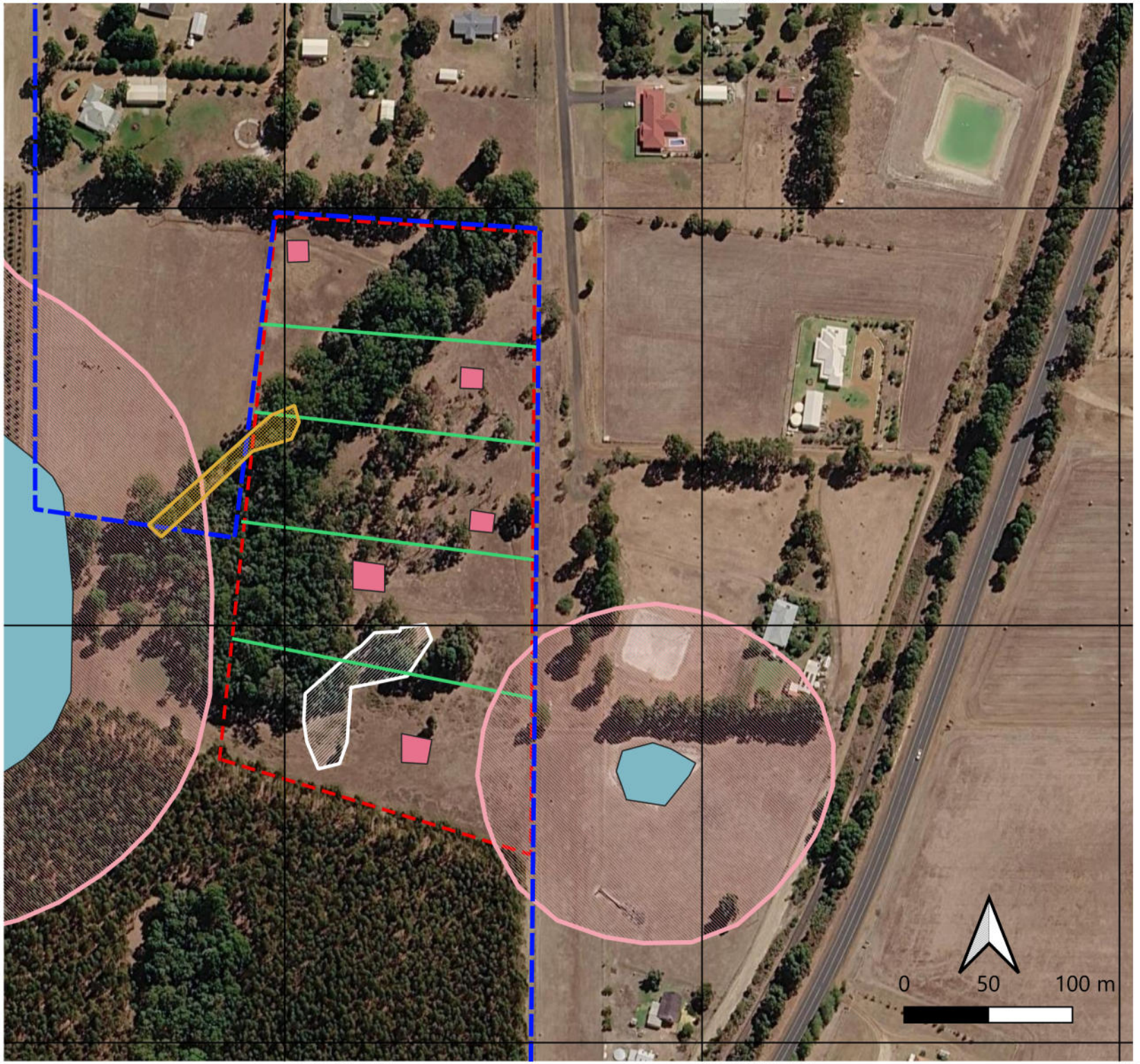
- Original Property Boundary
- Planned Rezone Area Boundary
- Farm Dams of WA
- 100m Separation from Dam
- Area of Identified Surface Inundation
- Subsurface Laterite
- Soil Bore Sample Locations
- Groundwater Monitoring Bore

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Figure 1: Site Boundary & Constraints.

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Drawn by: Brad Erceg
Date: August 2026
Proj: WGS 84 / Pseudo-Mercator EPSG:3857
brad@Westsoilandwater.com.au



LEGEND

- Original Property Boundary
- Planned Rezone Area Boundary
- Farm Dams of WA
- Buffered
- Area of Identified Surface Inundation
- Subsurface Laterite
- LAA
- Potential Subdivisions

Note - the displayed potential subdivisions and land application areas are approximations only as a means of displaying the overall site's ability to accommodate these features.

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Figure 2: Site Subdivision Potential & Land Application Areas.

Drawn by: Brad Erceg
Date: August 2026
Proj: WGS 84 / Pseudo-Mercator EPSG:3857
brad@Westsoilandwater.com.au

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APPENDIX A
Development Details

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LEGEND

Site Boundary

Surrounding Land Use

- Rural Residential
- Parks and Recreation
- Priority Agriculture
- General Agriculture
- Public Purpose - Government Timber
- Enterprise
- Railway
- Highway / Main Road
- Local Road

N

0 25 50 100 150 200 m

Scale: 1:5,000 @ A3

GCS GDA 1994

WALKER ST

SEVEN DAY RD

DEMIRIS RD

BELLA VISTA RD

SOUTH WESTERN HWY

21

19

100

12

9

462

Source: Cadastre - Landgate
Orthophoto - World Imagery
Surrounding Land Use - DPLH

Source: Esri, Vantor, Earthstar Geographics, and the GIS User Community

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COTERRA ENVIRONMENT

Job: TBBJAR03
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Ph: (08) 9381 5513
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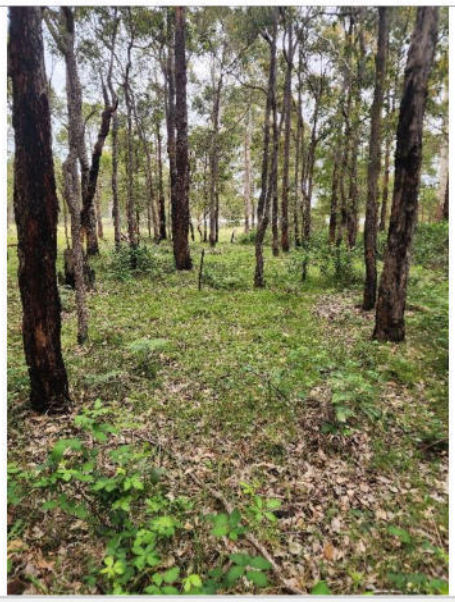
TBB
ENVIRONMENTAL SUMMARY REPORT
JARDEE RURAL RESIDENTIAL DEVELOPMENT

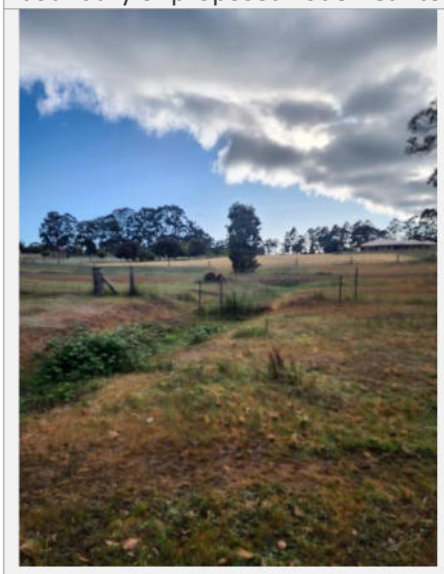
SURROUNDING LAND USES

Figure 2

C:\GIS\Jobs\CoTerra\TBBJAR03 - Jardee Rural Residential Development – ESR\Figures\TBBJAR03_F02 Surrounding Land Uses_260604.mxd

APPENDIX B
Photographs

	
North-west portion of proposed Lot 2	Native vegetation general are in north-west portion of site
	
Native vegetation general are in north-west portion of site	Inundated Area located outside of western boundary of proposed Lot 3 near to farm dam.

	
Inundated Area located outside of western boundary of proposed Lot 3 near to farm dam.	North-east area of site within proposed Lot 2, noting entry of culvert drain
	
North-east area of site within proposed Lot 2, noting entry of culvert drain	Central-east portion of site (proposed lots 2 and 3)



Central-east portion of site (proposed lots 3 and 4)



Installation of SB1

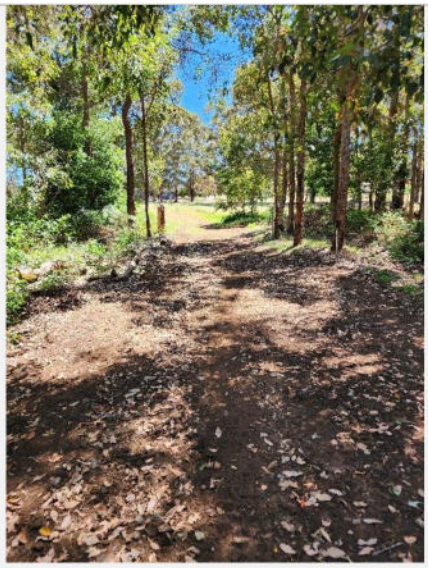


SB1



SB2

	
Soil material within groundwater zone, GMB (6-9mbgl)	GMB installation
	
Lateritic material encountered	SB7

	
Proposed Lot 1 general area	SB3
	
View from eastern portion of site downslope to western portion, within proposed Lot 5	SB4



SB5



SB6



SB6

APPENDIX C

Laboratory Certificates of Analysis

Page 1 of 1

Project Reference	20231106_Paradox Church SSE
Site	Bella Vista
Sample Type	Soil
Scientist(s)	S.Mueller
Results:	sam@westsoilandwater.com.au
Invoice:	sam@westsoilandwater.com.au

ANALYSIS SUITES

SAMPLE ID.	DATE	PRESERVATION		pH	Phosphorus Retention Index	Soil Classification by Particle Size Analysis (Sieve Hydrometer and SPD analysis to "Yellow Book" specification - 4 analytes No graphs)	Electrical Conductivity EC1:5 (salinity)	Sodicity (Exchange Sodium Percentage, ESP)	Phosphorus Adsorption (mg/kg)	Salinity	Total # of Bottles	Total # of Bags	Total # of Soil Jars	COMMENTS	LAB ID
		Ice	None												
SB1-0.5	31/10/2023	X		X	X	X	X	X	X			1	1		
SB1-1.3	31/10/2023	X		X	X	X	X	X	X			1	1		
SB2- 0.50	31/10/2023	X		X	X	X	X	X	X			1	1		
SB2- 2.00	31/10/2023	X		X	X	X	X	X	X			1	1		
SB3- 2.00	31/10/2023	X		X	X	X	X	X	X			1	1		
SB6- 1.00	31/10/2023	X		X	X	X	X	X	X			1	1		
GW 1.00	22/11/2023	X								X	1	1	1		

Total # of Containers:

Total # of Eskies: 1

Relinquished by	S.Mueller
Organisation	WS&W
Date	23/11/2023
Time	AM

Signature

Received by	
Organisation	
Date	
Time	1400 23/11
Condition upon reciept	

Notes:

Quote #:

WEST SOIL & WATER

p: 0424021264
e: sam@westsoilandwater.com.au
w: www.westsoilandwater.com.au

Environmental Division
Perth
Work Order Reference
EP2316699

Telephone : +61-8-9406 1301

CERTIFICATE OF ANALYSIS

Work Order	: **EP2316699**	Page	: 1 of 5
Amendment	: **1**		
Client	: **West Soil & Water**	Laboratory	: Environmental Division Perth
Contact	: Sam Mueller	Contact	: Customer Services EP
Address	: 3/194 Holbeck Street Doubleview 6018	Address	: 26 Rigali Way Wangara WA Australia 6065
Telephone	: ----	Telephone	: +61-8-9406 1301
Project	: 20231106_Paradox Church SSE	Date Samples Received	: 23-Nov-2023 14:00
Order number	: ----	Date Analysis Commenced	: 04-Dec-2023
C-O-C number	: ----	Issue Date	: 20-Dec-2023 12:33
Sampler	: Sam Mueller		
Site	: Bella Vista		
Quote number	: EN-111		
No. of samples received	: 7		
No. of samples analysed	: 7		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
	Laboratory Technician	Newcastle - Inorganics, Mayfield West, NSW
	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
	Laboratory Manager (Perth)	Perth Inorganics, Wangara, WA
	Inorganics Analyst	Perth Inorganics, Wangara, WA

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EA150H: Soil particle density results fell outside the scope of AS1289.3.6.3 for samples EP2316699-002, 003, 004, 005, 006. Results should be scrutinised accordingly.
- ED007: Poor duplicate precision was obtained for Cation Exchange Capacity and Exchangeable Calcium on sample EP2316699-001 due to possible sample heterogeneity. Sample visually inspected and found to be heterogenous.
- Amendment (15/12/2023): This report has been amended and re-released to allow the reporting of additional analytical data, specifically method PRI-SOL (Phosphorus Retention Index) for samples EP2316699_001/002/003/004/005/006.
- ED007 and ED008: When Exchangeable Al is reported from these methods, it should be noted that Rayment & Lyons (2011) suggests Exchange Acidity by 1M KCl - Method 15G1 (ED005) is a more suitable method for the determination of exchange acidity (H+ + Al3+).

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	SB1-0.5	SB1-1.3	SB2- 0.50	SB2- 2.00	SB3- 2.00
			Sampling date / time	31-Oct-2023 00:00	31-Oct-2023 00:00	31-Oct-2023 00:00	31-Oct-2023 00:00	31-Oct-2023 00:00
Compound	CAS Number	LOR	Unit	EP2316699-001	EP2316699-002	EP2316699-003	EP2316699-004	EP2316699-005
				Result	Result	Result	Result	Result
EA002: pH 1:5 (Soils)								
pH Value	----	0.1	pH Unit	6.2	6.1	6.3	4.5	4.0
EA010: Conductivity (1:5)								
Electrical Conductivity @ 25°C	----	1	µS/cm	22	16	26	118	159
EA150: Soil Classification - National Committee on Soil and Terrain (2009)								
Clay (<2 µm)	----	1	%	3	4	4	30	71
Silt (2-20 µm)	----	1	%	1	6	<1	10	5
Fine Sand (0.02-0.2 mm)	----	1	%	13	15	8	19	14
Coarse Sand (0.2-2.0 mm)	----	1	%	26	26	20	19	4
Gravel (>2mm)	----	1	%	57	49	68	22	6
EA152: Soil Particle Density								
Soil Particle Density (Clay/Silt/Sand)	----	0.01	g/cm3	2.61	1.99	2.39	2.27	2.25
ED007: Exchangeable Cations								
Exchangeable Calcium	----	0.1	meq/100g	1.7	0.4	1.2	0.1	<0.1
Exchangeable Magnesium	----	0.1	meq/100g	0.4	0.2	0.3	0.6	0.2
Exchangeable Potassium	----	0.1	meq/100g	0.1	<0.1	0.3	<0.1	<0.1
Exchangeable Sodium	----	0.1	meq/100g	0.1	<0.1	<0.1	0.4	0.6
Cation Exchange Capacity	----	0.1	meq/100g	2.3	0.7	1.8	1.0	0.8
Exchangeable Sodium Percent	----	0.1	%	4.7	8.7	3.8	34.0	75.6
EK072: Phosphate Sorption Capacity								
Phosphate Sorption Capacity	----	250	mg P sorbed/kg	2390	2440	3320	1530	1800

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	SB6- 1.00	----	----	----	----
			Sampling date / time	31-Oct-2023 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit	EP2316699-006	--------	--------	--------	--------
				Result	----	----	----	----
EA002: pH 1:5 (Soils)								
pH Value	----	0.1	pH Unit	**6.1**	----	----	----	----
EA010: Conductivity (1:5)								
Electrical Conductivity @ 25°C	----	1	µS/cm	**14**	----	----	----	----
EA150: Soil Classification - National Committee on Soil and Terrain (2009)								
Clay (<2 µm)	----	1	%	**13**	----	----	----	----
Silt (2-20 µm)	----	1	%	**7**	----	----	----	----
Fine Sand (0.02-0.2 mm)	----	1	%	**24**	----	----	----	----
Coarse Sand (0.2-2.0 mm)	----	1	%	**21**	----	----	----	----
Gravel (>2mm)	----	1	%	**35**	----	----	----	----
EA152: Soil Particle Density								
Soil Particle Density (Clay/Silt/Sand)	----	0.01	g/cm3	**2.33**	----	----	----	----
ED007: Exchangeable Cations								
Exchangeable Calcium	----	0.1	meq/100g	**0.5**	----	----	----	----
Exchangeable Magnesium	----	0.1	meq/100g	**0.1**	----	----	----	----
Exchangeable Potassium	----	0.1	meq/100g	<0.1	----	----	----	----
Exchangeable Sodium	----	0.1	meq/100g	<0.1	----	----	----	----
Cation Exchange Capacity	----	0.1	meq/100g	**0.8**	----	----	----	----
Exchangeable Sodium Percent	----	0.1	%	**8.7**	----	----	----	----
EK072: Phosphate Sorption Capacity								
Phosphate Sorption Capacity	----	250	mg P sorbed/kg	**2490**	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	GW 1.00	----	----	----	----
				Sampling date / time	22-Nov-2023 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EP2316699-007	--------	--------	--------	--------
					Result	----	----	----	----
EA010P: Conductivity by PC Titrator									
Electrical Conductivity @ 25°C	----	1	µS/cm		**398**	**----**	**----**	**----**	**----**
EA020EC: Salinity									
Salinity	----	0.01	g/kg		**0.19**	**----**	**----**	**----**	**----**

Inter-Laboratory Testing

Analysis conducted by ALS Newcastle, NATA accreditation no. 825, site no. 1656 (Chemistry) 9854 (Biology).

(SOIL) EA150: Soil Classification - National Committee on Soil and Terrain (2009)

(SOIL) EA152: Soil Particle Density

Analysis conducted by ALS Sydney, NATA accreditation no. 825, site no. 10911 (Chemistry) 14913 (Biology).

(SOIL) EK072: Phosphate Sorption Capacity

GOVERNMENT OF WESTERN AUSTRALIA

ChemCentre

Scientific Services Division

Report of Examination

Resources and Chemistry Precinct
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Bentley
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www.chemcentre.wa.gov.au
ABN 40 991 885 705

Purchase Order: 620642
Your Reference:
ChemCentre Reference: 23S2195 R1

Australian Laboratory Services Pty Ltd
26 Rigali Way
WANGARA WA 6065

Attention: Client Services

Final Report on 6 samples of soil received on 15/12/2023

LAB ID	Client ID and Description
23S2195 / 001	SB1-0.5 EP2316699_001
23S2195 / 002	SB1-1.3 EP2316699_002
23S2195 / 003	SB2-0.50 EP2316699_003
23S2195 / 004	SB2-2.00 EP2316699_004
23S2195 / 005	SB3-2.00 EP2316699_005
23S2195 / 006	SB6-1.00 EP2316699_006

Analyte		P
Method		PRI
Unit		mL/g
Lab ID	**Client ID^**	
23S2195/001	SB1-0.5	>1000
23S2195/002	SB1-1.3	>1000
23S2195/003	SB2-0.50	>1000
23S2195/004	SB2-2.00	>1000
23S2195/005	SB3-2.00	<-20
23S2195/006	SB6-1.00	>1000

Analyte	Method	Description
P	PRI	Phosphorus Retention Index by method S15

Results are based on a air-dry (40C) , < 2 mm basis. Stones (>2mm) if present are reported on an air dry whole sample basis.The results apply only to samples as received. This report may only be reproduced in full.

Unless otherwise advised, the samples in this job will be disposed of after a holding period of 30 days from the report date shown below.

Phosphorus Retention Index (PRI) is a measure of the ability of soil to retain or leach applied phosphate.

PRI is defined as the ratio P ads : P eq where P ads is the amount of phosphorus adsorbed by soil (µg P/g soil) .

The phosphorus fixation properties of soil may be described by the following PRI values:

PRI

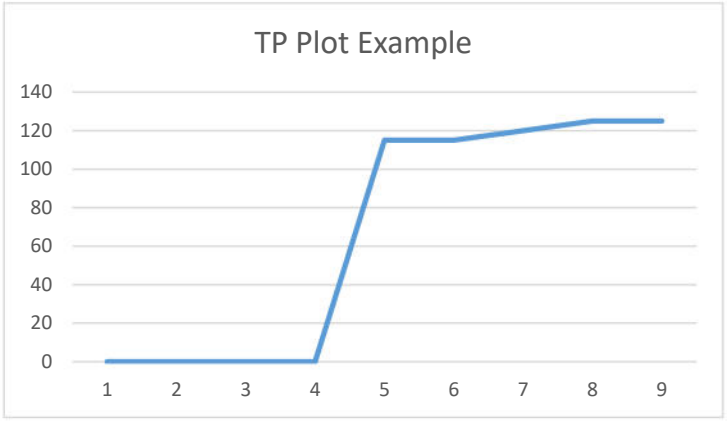
negative	desorbing (P leaching)
0 - 2	weakly adsorbing
2 - 20	moderately adsorbing
20 - 100	strongly adsorbing
>100	very strongly adsorbing

*Analysis not covered by scope of ChemCentre's NATA accreditation.
^Information provided by client, unless otherwise stated.

Senior Scientist
Scientific Services Division
20-Dec-2023

APPENDIX D
Field Results

Field Readings - 31/10/2023	SB2		SB1		SB4		SB6	
	Reading	Observed difference (mm)	Reading	Observed difference (mm)	Reading	Observed difference (mm)	Reading	Observed difference (mm)
Data outliers (initial readings generally) are removed so that plotted rate is noted to be constant (note below) - and representative of saturated flow rate. Field recording may cease when flow is observed to be steady and sufficient readings have been taken.	85		90		110		115	
	90	5	95	5	115	5	115	0
	100	10	100	5	125	10	120	5
	110	10	105	5	130	5	125	5
	125	15	135	30	145	15	125	0
	130	5	140	5	150	5	135	10
	140	10	150	10	150	0	140	5
	150	10	160	10	165	15	150	10
	165	15	175	15	185	20	165	15
	Average (cm)	1	Average (cm)	1.0625	Average (cm)	0.9375	Average (cm)	0.625
Time constant (min)	1							
Measuring device diameter	3.5							
Radius of measuring device	1.75							
Area of measuring device	9.62							
Borehole diameter	7.5							
Borehole base area	44.18							
Pi	3.14159							
Device factor (internal area of the measuring cylinder) (DF)	9.621119375							
Calculate water flow cubic cm/min (Q)	9.621119375		10.22243934		9.019799414		6.013199609	
Calculated flow into soil - hydraulic conductivity (Ksat cm/min)	**0.22**		**0.23**		**0.20**		**0.14**	
Calculated flow into soil - hydraulic conductivity (Ksat m/day)	**3.14**		**3.33**		**2.94**		**1.96**	



APPENDIX E

DoH Separation Distances

Site Feature	Setback Distance, m
Horizontal setback distances	
Treatment tanks to buildings, property boundaries, driveways, paths and other tanks	1.2
Tranches, beds and soak wells to boundary, building, tanks and other land application systems	1.8
Tranches, beds and soak wells to trafficable areas	1.2
Any land application system to wells, stream, private bores or underground source of water intended for human consumption	30
Tranches, beds and soak wells to subsoil drainage or open drainage channel (as per **Section 8.7.8 of the SPP** a separation of 100m is required if there is discharge into a waterway or significant wetland without treatment of the discharge)	6.0
Spray Irrigation: • Boundaries, buildings, driveways etc • Sub-soil and open drain • Swimming pool • Treatment tanks	 1.8 6.0 3.0
Subsurface Dripper: • Boundaries, buildings, treatment tanks, driveways etc • Sub-soil and open drain • Swimming pool • Garden bore	 0.5 3.0 2.0
On-site wastewater system to water resources (for more details refer to **Section 8.7.8 of the SPP**)	100
On-site wastewater system must not be located within any area subject to inundation and/or flooding in a 10 per cent Annual Exceedance Probability (AEP) rainfall event	
Vertical setback distances	

Discharge point of the on-site wastewater system to the highest known groundwater level:
• PDWSA
• Sensitive water resource areas
• All other areas -
  ○ Sands
  ○ Gravels
  ○ Loams and heavy soils
	
	2.0
	1.5
	
	1.5
	1.0

Hardpan or bedrock (depends on quality of treated wastewater and type of LAS)	0.6-1.5

West Soil and Water Pty Ltd
ABN: 80 670 322 915

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E:

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Appendix C

BUSHFIRE MANAGEMENT PLAN

BUSHFIRE ADVICE BRIEF

ASSESSMENT AND PROPOSED DEVELOPMENT/USE DETAILS

ASSESSMENT					
BPP Job Reference No.		250346			
Client Details	Contact		Business	-	
Bushfire Planning Consultant		Selina Hutcheon (BPAD Level 1 No. 63345)			
Appraisal Method:	Desktop / Remote			Date	24 July 2026
PROPOSED DEVELOPMENT/USE					
Description	Rezoning from Priority Agriculture to Rural Residential				
Site Location	Lot 101 Bella Vista Road, Jardee			Lot Size	6.5ha
Is a planning application that addresses the requirements established by State Planning Policy 3.7 required?					Yes

SUMMARY STATEMENTS

The subject site has previously had extensive bushfire reporting completed including the original BMP prepared by Bushfire Safety Consulting to support a subdivision plan, prepared under a previous version of the Guidelines.

This Bushfire Advisory Brief has been prepared as a discrete yet complementary assessment to determine whether there are any fatal flaws, from a bushfire perspective, in considering the proposed rezoning of the subject site from Priority Agriculture to Rural Residential. Critically, it incorporates a Broader Landscape Assessment prepared in accordance with the *Planning for Bushfire Guidelines* (November 2024), which was introduced following completion of the previous bushfire assessment and is now required to inform the strategic planning merits of rezoning proposals.

In summary, this Bushfire Advisory Brief has not identified any fatal flaws that would preclude the future rezoning of the subject site from Priority Agriculture to Rural Residential, or the subsequent demonstration of compliance with State Planning Policy 3.7 – Planning in Bushfire Prone Areas and the Planning for Bushfire Guidelines. The proposal is therefore considered capable of progressing to the next stage of the planning process, subject to the preparation of the detailed bushfire documentation required at subdivision.

Further to the above, to address the Shire's specific comment (17) on the proposed Emergency Access Way (EAW):

- It is understood locked gates were agreed upon in an April 2021 site meeting with MRWA.
- While unlocked gates are preferred for an EAW the Guidelines (section B.3.4.5) provide guidance on a "restricted public emergency access way". As stated in the Guidelines, there are instances where local governments or Main Roads WA may prefer to keep gates locked. A common key system is recommended to be used with keys provided to Shire fire officers and emergency services. Ultimately the Guidelines allow for local governments to consider the specific circumstances of each proposal and EAW to decide on the appropriate way to proceed.

POTENTIAL FOR THE PROPOSAL TO ACHIEVE THE OBJECTIVES AND POLICY OUTCOMES OF SPP 3.7

EXPLANATORY INFORMATION

Any planning proposal, in a designated bushfire prone area, that is required to have planning approval from the relevant decision maker, must meet the requirements established by SPP 3.7 and the associated Guidelines.

The Guidelines establish the key bushfire protection measures that are considered by the regulatory authorities to result in acceptable levels of the risks associated with a bushfire event.

These protection measures are established within the bushfire protection criteria as Acceptable Solutions and grouped under the four Elements of Location, Siting and Design, Vehicular Access and Water Supply (as relevant to the planning proposal stage).

The likelihood of compliance being achieved relative to the various Elements is outlined in the tables below, which also demonstrates the ability of the proposal to meet the broader policy outcomes of SPP 3.7.

When an acceptable solution is unlikely to be achieved, SPP 3.7 provides an alternative pathway (the outcomes-based approach) that can be explored in more detailed assessments.

The Applicable Bushfire Protection Criteria (BPC)	BPC 4: Strategic Planning

THROUGH APPLICATION OF THE ACCEPTABLE SOLUTION PATHWAY

Element 1: Location	Compliance Likelihood				
	Almost None	Unlikely	Possibly	Likely	Almost Certain
					✓

Assessment Comments:

Application of the Simplified Assessment

ASSESSMENT AGAINST THE COMPLIANCE VERIFICATION CRITERIA (applying the requirements established by SPP 3.7 & Guidelines, Appendix A1.4.1)	
DETERMINATION OF THE ABILITY TO UNDERTAKE A SIMPLIFIED BROADER LANDSCAPE ASSESSMENT	
	Site Assessment Response
The subject site is within a kilometre (line of sight) of a suitable destination.	No
The road pattern from the planning proposal to the suitable destination is simple and/or direct (limited intersections).	Yes
The planning proposal is exposed to identified higher threat level bushfire hazards from two or less aspects.	No
ASSESSMENT OUTCOME	
The assessment responses include a 'NO'. A full BLA must be undertaken.	

Application of the Full Assessment

DETERMINATION OF THE BROADER LANDSCAPE TYPE – ASSESSED APPLYING A POINTS BASED SYSTEM				
APPLIED METHODOLOGY (GUIDELINES APPENDIX A1, NOV 2024)				
Criteria	5 Points	2 Points	1 Point	Assessed Points [1]
Proximity of the planning proposal to a 'suitable destination' (refer to SPP 3.7 Definitions).	>10 km	1-10 km	<1 km	**2**
The road pattern from the planning proposal to a suitable destination.	Complex and indirect (cul-de-sacs and/or multiple intersections)	Mixed road patterns	Simple and/or direct (limited intersections)	**1**
The predominant vegetation pattern.	Large tracts of contiguous vegetation	A mosaic pattern of vegetation (e.g. vegetation within rural living precincts)	Cleared vegetation (e.g. clearing for residential zoned urban lots)	**2**
Aspect exposure of the planning proposal to an identified external bushfire hazard (excluding Class G Grassland).	Three or four aspects	Two aspects	One aspect or none	**5**
			TOTAL	**10**
DETERMINED BROADER LANDSCAPE TYPE (BLT)				
4 - 11 Points = Type A				
IMPLICATIONS FOR THE SUBJECT PLANNING PROPOSAL AND CONTENT OF THIS BMP				
The determination as Landscape Type A demonstrates compliance with BPC Element 1: Location. No further assessments are required.				
Note 1: Refer to assessment supporting details and maps and on the following pages.				

FULL BLA - CRITERIA ASSESSMENT - SUPPORTING DETAILS
Proximity of the planning proposal to a 'suitable destination' (refer to SPP 3.7 Definitions).
The proposal is 2km from the edge of the Manjimup township (2.3km by road). The town centre is 3km from the proposal.
The road pattern from the planning proposal to a suitable destination.
Evacuating to the township can be achieved by travelling north on Bella Vista Rd, east on Seven Day Rd, then north on either Chopping St or the South-Western Highway. Alternative access via the EAW is available to the south.
The predominant vegetation pattern.
The predominant vegetation pattern is paddock grassland areas with mosaic type vegetation, and some large tracts of vegetation.
Aspect exposure of the planning proposal to an identified external bushfire hazard (excluding Class G Grassland).
The northeast, southeast and southwest aspects include large tracts of vegetation within 2km of the proposal.

Element 2: Siting and Design	Compliance Likelihood				
	Almost None	Unlikely	Possibly	Likely	Almost Certain
					✓

Assessment Comments:

Bushfire Safety Consulting assessed the vegetation onsite. Refer to their BMP for further details.

A completely revised BMP will need to be prepared at the subdivision stage which will ensure a BAL-29 or below can be achieved within each Lot.

BPP has undertaken this updated strategic assessment as a discrete component. A site inspection to independently verify the vegetation classifications adopted from the previous Bushfire Assessment was not considered warranted given vegetation was assessed by BPAD Level 3 accredited bushfire practitioner and only a high-level assessment is required at this stage.

While a Bushfire Hazard Assessment (BHA) has not been prepared, BPP considers that the Broader Landscape Assessment (Element 1) provides substantially greater value in assessing the strategic suitability of the proposal than the three broad hazard categories typically depicted on a BHA map.

It is acknowledged that any future planning stage, including subdivision, will require a detailed site inspection as part of the preparation of a Bushfire Management Plan (BMP) to verify the vegetation classifications and confirm the bushfire assessment.

The environmental report prepared by Coterra indicates that it is unlikely that any onsite vegetation will be deemed conservation significant ecological communities. Limits on where APZs may be are not considered, although retaining native vegetation is recommended to be prioritised.

Element 3: Vehicular Access	Compliance Likelihood				
	Almost None	Unlikely	Possibly	Likely	Almost Certain
					✓

Assessment Comments:

Public Roads:

Bella Vista Road will be used to access future lots. Bella Vista Rd is a public road 6m in trafficable width with >1m clearance either side. No limits to vertical clearance have been identified. No weight capacity limits have been identified.

Access Routes:

The proposal will construct Bella Vista Road to be greater in length and feature an Emergency Access Way across the railway to the South-Western Highway. This EAW will serve as a secondary access for the proposal. The railway is signposted as "Not in Use" and therefore delays from trains are not expected.

No-Through Roads: The existing no through road (Bella Vista Road) will be extended and an EAW across the existing railway will be provided. This will benefit the future subdivision and the existing properties on the no-through road. No roads or lot boundaries for the revised site area have been proposed; these will be addressed at the subdivision stage.

Element 4: Water Supply	Compliance Likelihood				
	Almost None	Unlikely	Possibly	Likely	Almost Certain
					✓

Assessment Comments:

Future residential dwellings will be required to provide a minimum of 10,000L of dedicated firefighting supply per habitable dwelling. This will be required at the development application stage.

ATTACHMENT 1 – BROADER LANDSCAPE ASSESSMENT MAPS

Figure 2.1

Vegetation Aspect Assessment

Lot 101 on Plan 69756, Area : 44.2ha
Demiris Drive and Bella Vista Rd Jardee
JARDEE
SHIRE OF MANJIMUP

NW
NE
SW
SE
DEANMILL
MANJIMUP
JARDEE
MIDDLESEX
Lot 101

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

- Subject Site
- Proposed Scheme Amendment
- Suburb
- 2km Assessment Area
- Assesment Aspects

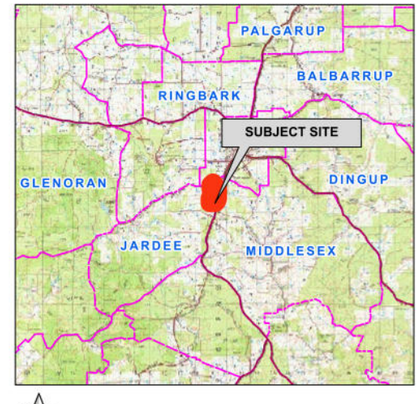
Vegetation Categories

- Other Classified Vegetation
- Unmanaged Grassland
- Low Threat Vegetation

0 200 400 600 800 1,000

Metres

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



AERIAL IMAGERY: Landgate/SLIP

Coordinate System: GDA 1994 MGA Zone 50
Projection: Universal Transverse Merctaor Units: Metre
Map by: Selina Hutcheon 22-07-2026
SCALE (A3): 1 : 16000

BUSHFIRE PRONE PLANNING

Disclaimer and Limitation: This map has been prepared for bushfire management planning purposes only. All depicted areas, contours and any dimensions shown are subject to survey. Bushfire Prone Planning does not guarantee that this map is without flaw of any kind and disclaims all liability for any errors, loss or other consequence which may arise from relying on any information depicted.

Figure 2.2

Predominant Vegetation Pattern

Lot 101 on Plan 69756, Area : 44.2ha
Demiris Drive and Bella Vista Rd Jardee
JARDEE
SHIRE OF MAJIMUP

NW
NE
SW
SE
DEANMILL
MANJIMUP
JARDEE
MIDDLESEX
Lot 101

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

- Subject Site
- Proposed Scheme Amendment
- Suburb
- 2km Assessment Area
- Assesment Aspects

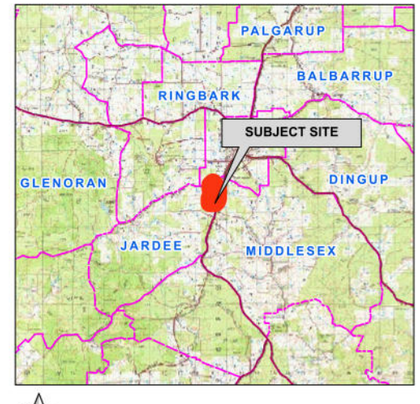
Vegetation Patterns

- Large Tracts of Classified Vegetation
- Mosaic Pattern
- Low Threat Vegetation

0 200 400 600 800 1,000

Metres

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



AERIAL IMAGERY: Landgate/SLIP

Coordinate System: GDA 1994 MGA Zone 50
Projection: Universal Transverse Merctaor Units: Metre
Map by: Selina Hutcheon 22-07-2026
SCALE (A3): 1 : 16000

BUSHFIRE PRONE PLANNING

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Figure 2.3

Road Access Routes

Lot 101 on Plan 69756, Area : 44.2ha
Demiris Drive and Bella Vista Rd Jardee
JARDEE
SHIRE OF MAJIMUP

NW
NE
SW
SE
SPRINGALL RD
WEST BOUNDARY RD
SPRINGALL ST
MANJIMUP 2300M
DEANMILL MUSCHAMP RD
CHOPPING ST
MOTTRAM ST
MANJIMUP
FRANKLIN ST
SEVEN DAY RD
BELLA VISTA RD
SOUTH WESTERN HWY
STARKIES RD
Lot 101
TYNANS RD
JARDEE
MIDDLESEX
MIDDLESEX RD
CHURCHES RD
TOWIE RD

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

- Subject Site
- Suburb
- Proposed Scheme Amendment
- Primary Evacuation Route

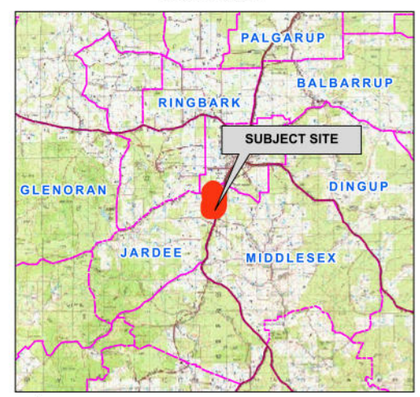
Roads

- Primary Regional Road
- District Road
- Local Road
- Access Track

0 200 400 600 800 1,000

Metres

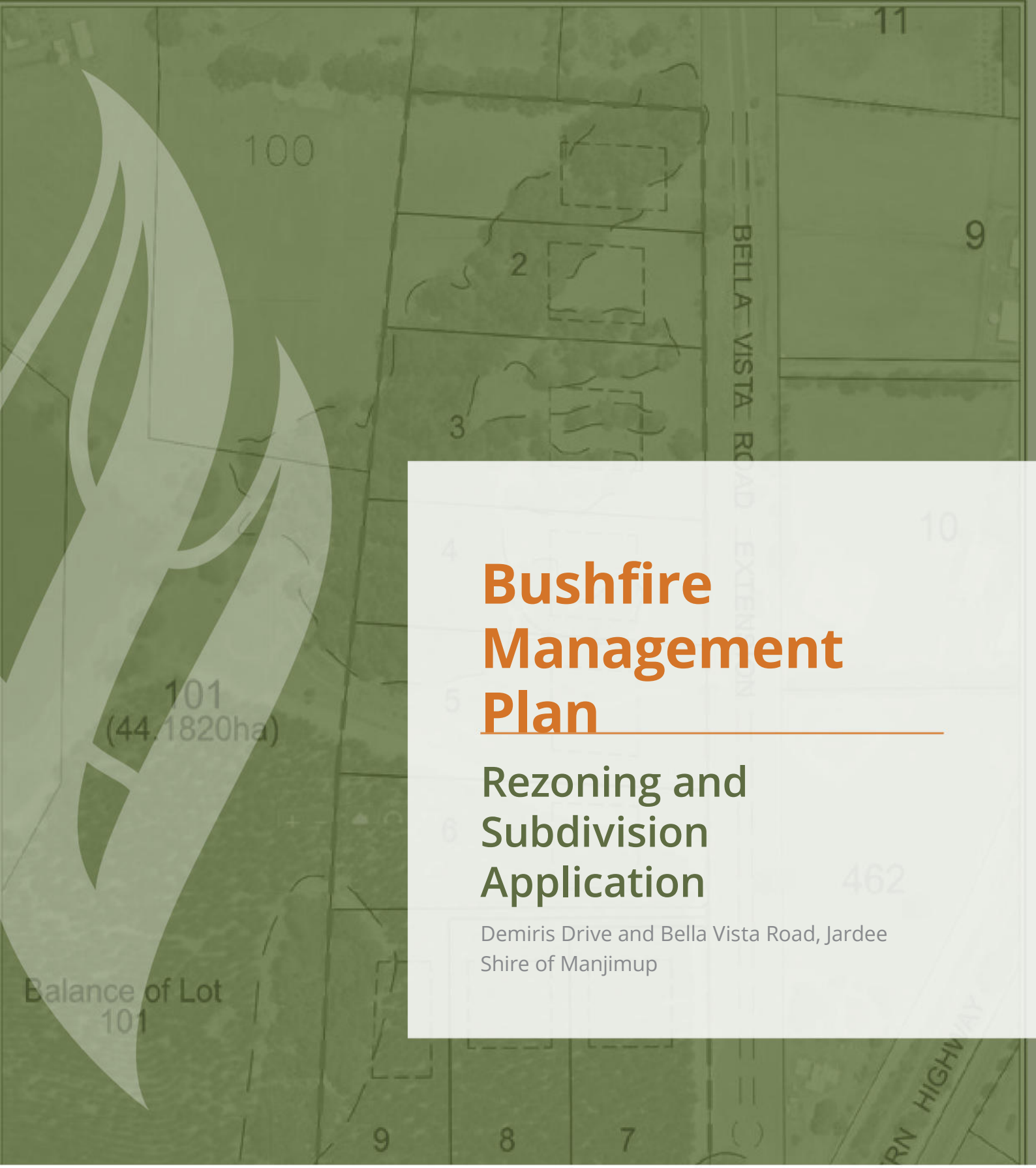
------ LOCALITY ------



AERIAL IMAGERY: Landgate/SLIP

Coordinate System: GDA 1994 MGA Zone 50
Projection: Universal Transverse Merctaor Units: Metre
Map by: Selina Hutcheon 22-07-2026
SCALE (A3): 1 : 20000

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Bushfire Management Plan

Rezoning and Subdivision Application

Demiris Drive and Bella Vista Road, Jardee
Shire of Manjimup

bushfire safety CONSULTING
Science. Culture. Solutions.

Prepared For:

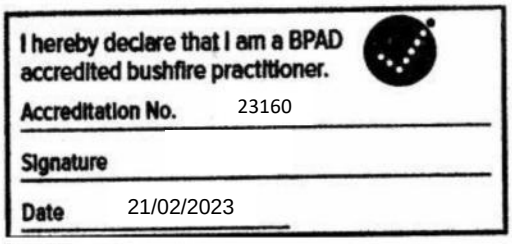
21 February 2023
Version 3.0

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Document Information

Prepared for:
Project Name: Residential Subdivision, 9 lots
Address: Dimiris Drive & Bella Vista Road, Jardee WA 6258
Prepared by: Rohan Carboon
Bushfire Safety Consulting Pty Ltd





Document Control

Bushfire Management Plan – Dimiris Drive & Bella Vista Road, Jardee			
REPORT VERSION	**PURPOSE**	**AUTHOR/REVIEWER AND ACCREDITATION DETAILS**	**DATE SUBMITTED**
V1.0	Draft for Review	Rohan Carboon (Level 3 BPAD 32160)	10/11/2021
V2.0	Amended version for re-submission	Rohan Carboon (Level 3 BPAD 32160)	6/12/2022
V3.0	Final response Shire of Manjimup for submission	Rohan Carboon (Level 3 BPAD 32160)	21/02/2023

Front cover photo: Subdivision plan

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Disclaimer:

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EXECUTIVE SUMMARY

This Bushfire Management Plan (BMP) has been prepared to support a rezoning application for Dimiris Drive and Bella Vista Road, Jardee. This area is herein referred to as "the site", it is approximately 11.24 hectares in size and is located 4 km south of Manjimup Town Centre.

Subsequent to comments from the Department of Planning, Land and Heritage the size of the site has been reduced to 6.5 Ha.

Future dwellings are exposed to bushfire attack from surrounding classified vegetation, however each lot can accommodate a building envelope and dwelling exposed to BAL-29 or lower and the subdivision can be fully achieved.

Bella Vista Road will be extended 370 metres and the exiting Emergency Access Way will be replaced by a new The poorly maintained existing 800 metre Emergency Access Way (EAW) that is sited at the end of the cul-de-sac and follows an alignment along the railway line will be replaced with a new 160m long EAW constructed and maintained to minimum standards.

The area is reticulated, and hydrants will be established to standards. The public road and fire hydrants are being extended to accommodate the development within the site.

A Method 1 BAL assessment has been undertaken to determine predicted radiant heat flux levels on the site and all lots can accommodate a building envelope and dwellings exposed to BAL-29 and lower.

The proposed building envelopes have been specifically aligned adjacent to one another so as each future dwelling has an Asset Protection Zone that extends to the lot boundary towards the neighbouring building envelope. This is required to ensure the estate has a connected Asset Protection Zone which results in improved safety and reduced exposure for all dwellings and residents. Lots are not wide enough to accommodate dwellings with exposure of BAL-29 unless they are aligned with each other.

The proposed subdivision can achieve all of the Acceptable Solutions and Performance Principles in the Guidelines for Planning in Bushfire Prone Areas V1.4 (2021). The developer is responsible for ensuring Asset Protection Zones are established and the provision of water and vehicular access are met. All lot owners will comply with the Shire of Manjimup Firebreak and Fuel Hazard Reduction Notice standards. Within residential lots, fuel loads and the ongoing responsibility for APZ standards are transferred to the new owners/ occupiers of the land when purchased.

It is expected that the implementation of this BMP will reduce the threat to residents, the public and fire fighters in the area addressed by this BMP. The proposal complies with the *State Planning Policy No. 3.7: Planning in Bushfire Prone Areas (SPP 3.7)* and the *Guidelines for Planning in Bushfire Prone Areas* (WAPC 2021 V1.4).

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APPENDICES

Appendix 1: Asset Protection Zone Standards
Appendix 2: Vehicular Access Technical Requirements
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Appendix 4: Performance Solution - Element 3 Vehicular Access
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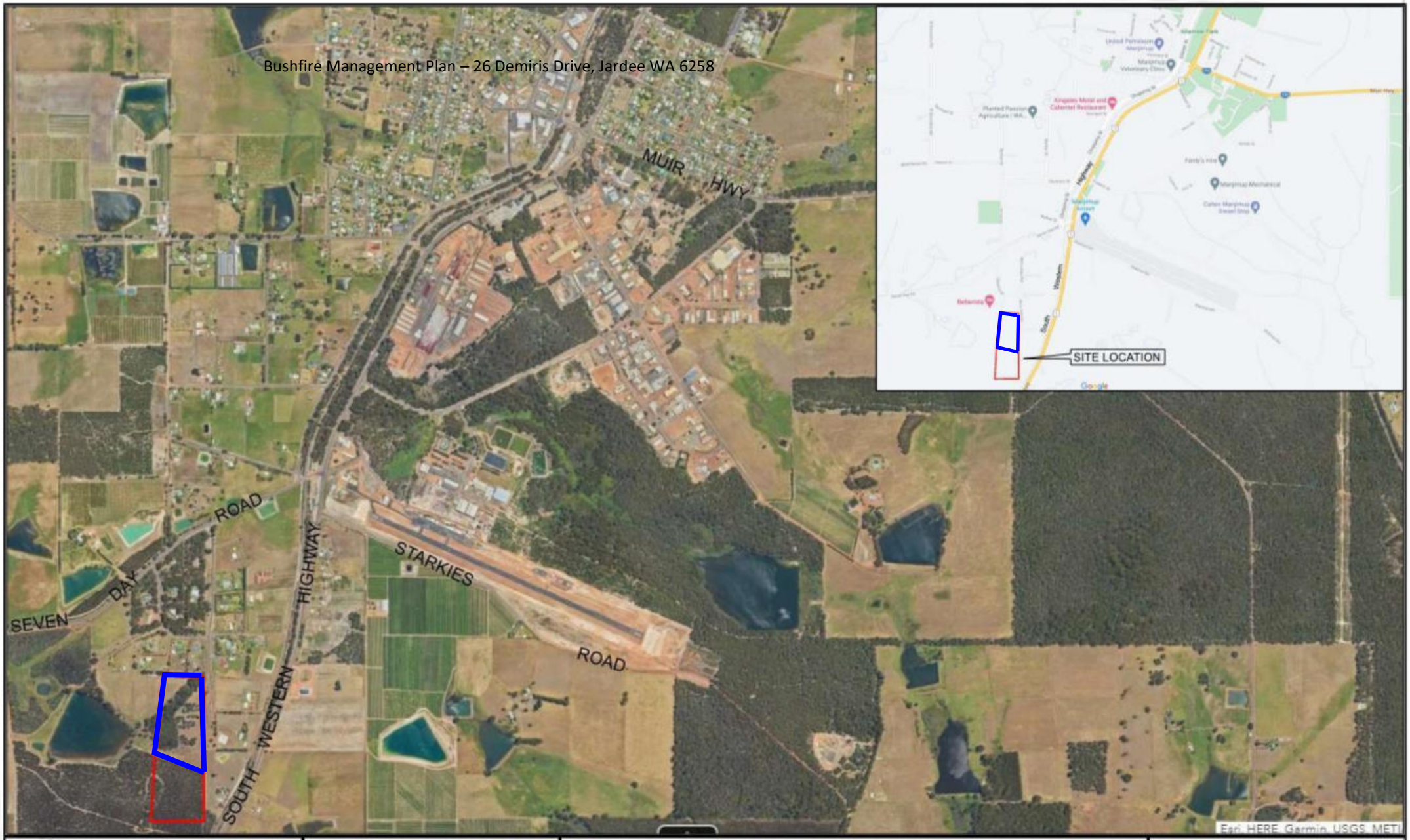
1 PROPOSAL DETAILS

This Bushfire Management Plan (BMP) has been prepared to support a rezoning application for Demiris Drive and Bella Vista Road, Jardee (herein referred to as 'the site'). The site is located approximately 4 kilometres south of Manjimup Town Centre in the Shire of Manjimup.

All lots will have direct driveway or battle-axe access onto a public road that links to Bella Vista Road and provides two way access to the north and the south on the public road system.
The area will be reticulated, with scheme water provided and fire hydrants within regulated access.

This BMP addresses future subdivision conditions by providing responses to the performance criteria in the *Guidelines for Planning in Bushfire Prone Areas* V1.4 (WAPC *et.al.* 2021).

Subsequent to comments from the Department of Planning, Land and Heritage the development site has been reduced to 6.5Ha and the minimum lot size is 1Ha.



Location details:	Demiris Drive & Bella Vista Road, Jardee
Assessment date:	April, 2020
Prepared by:	Bushfire Safety Consulting
Accreditation level:	Level 3 BPAD Practitioner
Accreditation number:	BPAD 23160
Accredidation expiry date:	31st January, 2021
Date aerial photo:	December 2018

FIGURE 2
SITE LOCATION PLAN

SCALE 1:20,000 @A4
DATE: SEPTEMBER 2021

LEGEND

SUBJECT LAND

SUBJECT LAND ADDRESSING COMMENTS FROM DEPARTMENT OF PLANNING, LANDS AND HERITAGE

Base mapping supplied by Nearmap & Google Maps

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Policy and Guidelines

1.1 Application of SPP 3.7

The *State Planning Policy No. 3.7: Planning in Bushfire Prone Areas (SPP 3.7)* provides the foundation for land use planning to address bushfire risk management in Western Australia. It is used to inform and guide decision makers, referral agencies and land owners/ proponents to help achieve acceptable bushfire protection outcomes.
The policy contains objectives and policy measures as well as reference to the bushfire protection criteria, as outlined in the Guidelines for Planning in Bushfire Prone Areas (WAPC 2017 V1.3; the 'Guidelines'). The policy applies to this subdivision proposal because the subdivision application is in a designated bushfire prone area on the WA Map of Bushfire Prone Areas (see Figure 3).
The following policy measures will need to comply with SPP 3.7:

Table 1. Policy measures

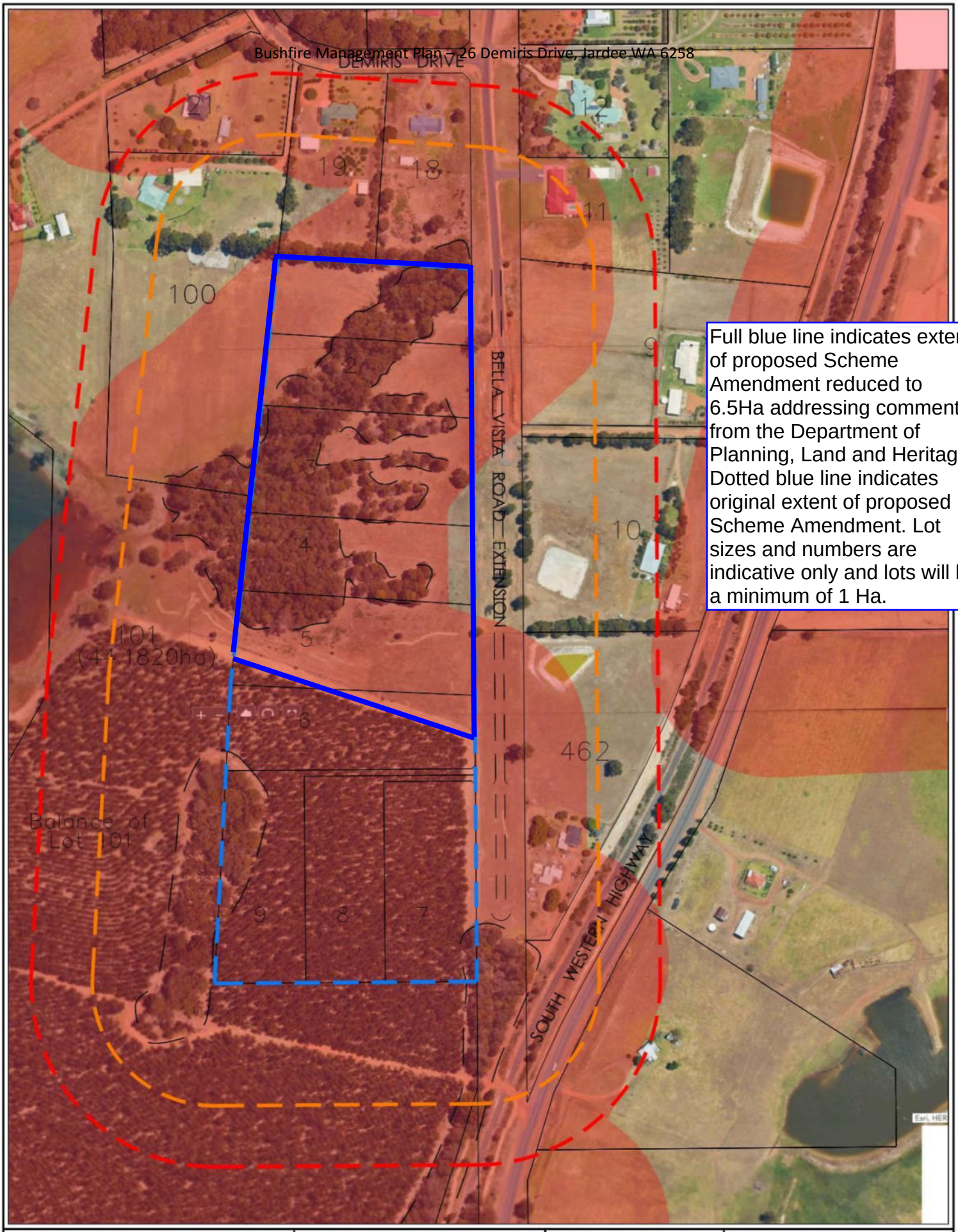
Policy Measure 6.2	The subdivision application is located within a designated bushfire prone area and will have a Bushfire Hazard Level above low and a Bushfire Attack Level rating above BAL-LOW.
Policy Measure 6.4	Policy 6.4 applies meaning the subdivision proposal will be accompanied by: - BAL Contour Plan - Lot specific BAL ratings - Identification of relevant issues; and - Demonstration of compliance with the guidelines

The subdivision proposal does not propose vulnerable or high-risk land use and is not considered as minor or unavoidable development under *SPP 3.7.*

1.2 Guidelines for Planning in Bushfire Prone Areas V1.3 (2017)

The requirements of The Department of Planning - *Guidelines for Planning in Bushfire Prone Areas V1.4 (2021)* are accommodated within this BMP.

The Guidelines are intended to inform and guide decision makers, referral authorities and proponents to achieve acceptable bushfire protection outcomes, including expectations at the different stages of planning.



Full blue line indicates extent of proposed Scheme Amendment reduced to 6.5Ha addressing comments from the Department of Planning, Land and Heritage. Dotted blue line indicates original extent of proposed Scheme Amendment. Lot sizes and numbers are indicative only and lots will be a minimum of 1 Ha.

Location details:	Demiris Drive & Bella Vista Road, Jardee
Assessment date:	April, 2020
Prepared by:	Bushfire Safety Consulting
Accreditation level:	Level 3 BPAD Practitioner
Accreditation number:	BPAD 23160
Accreditation expiry date:	31st January, 2023
Date aerial photo:	December 2018

FIGURE 3
BUSHFIRE PRONE AREAS

0 20 40 60 80 100 120m
NOT TO SCALE @ A3
DATE: FEBRUARY 2023

LEGEND:
SUBJECT LAND
ASSESSMENT AREA (150m) FROM THE EXTERNAL BOUNDARY OF THE SUBJECT SITE
ASSESSMENT AREA (100m) FROM THE EXTERNAL BOUNDARY OF THE SUBJECT SITE
BUSHFIRE PRONE AREAS

SOURCE OF PHOTOGRAPHY: NEARMAP

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2 ENVIRONMENTAL CONSIDERATIONS

2.1 Native Vegetation – modification and clearing

Lots have been sited and building envelopes designated to minimise the amount of clearing required. The building envelopes have been deliberately aligned adjacent to one another so as each future dwelling has an Asset Protection Zone that extends to the lot boundary towards the neighbouring building envelope. This creates protection for dwellings across the site and reduces the requirements for each lot to have larger APZs.

However, some native vegetation will need to be cleared to accommodate the future building envelopes and some fuel modification is required to establish Asset Protection Zones. Eight of the nine building envelopes are predominantly sited in cleared paddock areas or in the blue gum plantation.

A clearing permit will need to be applied for to establish the building envelopes and Asset Protection Zones. Our initial assessment confirms there will be significantly more than 10% retained native vegetation on the parent lot and the proposal impacts the blue gum plantation more than remnant native vegetation.

2.2 Re-vegetation/ Landscape Plans

There are no re-vegetation or proposed landscape plans for the site.

3 BUSHFIRE ASSESSMENT RESULTS

Bushfires are common in the Shire of Manjimup and local brigades respond to numerous bushfires in the district annually.
This BMP plays a critical role in ensuring that the development of the land appropriately mitigates the risk from bushfire from the surrounding vegetation.

3.1 Assessment Inputs

The methodology used to assess the site is outlined in the *Guidelines for Planning in Bushfire Prone Areas V1.4 (2021).* The lot layout is known, and a strategic level bushfire hazard assessment is not required. A BAL Contour map is provided in accordance with Appendix 3 of the guidelines.
Assessing bushfire threat at the site-specific level requires evaluating the predominant class of vegetation on the site and surrounding area for a minimum of 150 m, as shown in the Vegetation Classification Map (Figure 4).

3.1.1 Vegetation Classification

Vegetation within the proposed development site consists of pasture grasses, weeds, blue gum plantation Karri forest. Class A Forest eucalypt vegetation occurs on proposed lots 1-5, however building envelopes are positioned in the eastern half of the lots which minimises impact on the forest vegetation. Lots 6-9 have blue gum plantation vegetation which can be cleared and harvested at any time to accommodate the building envelopes and Asset Protection Zones. Small area of bracken fern and woodland vegetation also occur. Grassland is the dominant vegetation class surrounding the site, followed by blue gum plantation at the southern interface.
The vegetation plots on and surrounding the site and within 150 metres of the site boundary are found in Figure 4 with plot descriptions below.

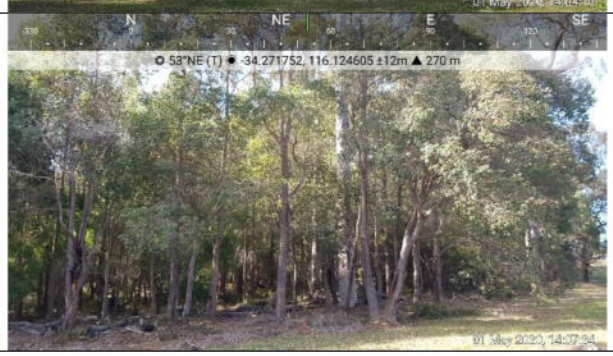
Photo ID: 1 **Plot Number:** 1 **Vegetation classification or exclusion clause:** Class A Forest **Description/justification of classification:** Overstorey of connected mature Eucalypt Karri trees with canopy foliage cover 30-70% and grassy and shrubby understorey.	
Photo ID: 2 **Plot Number:** 1 **Vegetation classification or exclusion clause:** Class A Forest **Description/justification of classification:** Overstorey of connected mature Eucalypt Karri trees with canopy foliage cover 30-70% and grassy and shrubby understorey.	
Photo ID: 3 **Plot Number:** 1 **Vegetation classification or exclusion clause:** Class A Forest **Description/justification of classification:** Overstorey of connected mature Eucalypt Karri trees with canopy foliage cover 30-70% and grassy and shrubby understorey.	
Photo ID: 4 **Plot Number:** 1 **Vegetation classification or exclusion clause:** Class A Forest **Description/justification of classification:** Overstorey of connected mature Eucalypt Karri trees with canopy foliage cover 30-70% and grassy and shrubby understorey.	
Photo ID: 5 **Plot Number:** 1 **Vegetation classification or exclusion clause:** Class A Forest **Description/justification of classification:** Overstorey of connected mature and regrowth Eucalypt trees with canopy foliage cover 30-70% and grassy and shrubby understorey.	

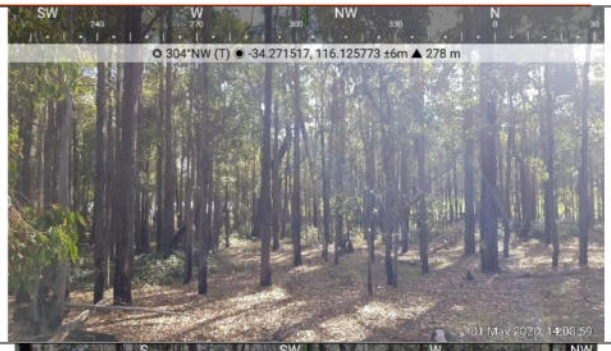
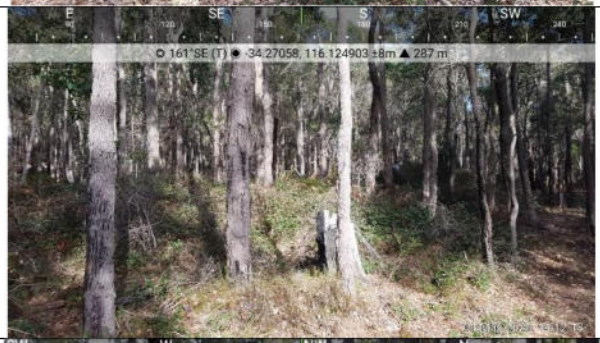
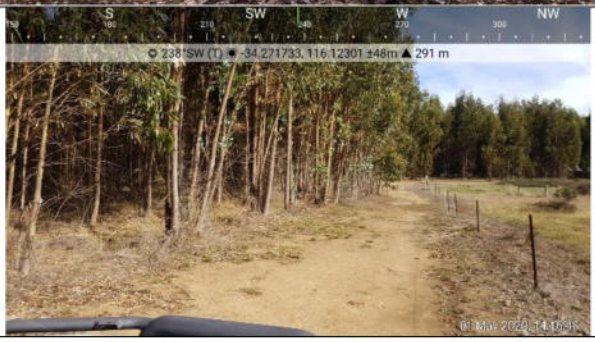
Photo ID: 6 **Plot Number:** 1 **Vegetation classification or exclusion clause:** Class A Forest **Description/justification of classification:** Overstorey of connected mature and regrowth Eucalypt trees with canopy foliage cover 30-70% and grassy and shrubby understorey.	
Photo ID: 7 **Plot Number:** 1 **Vegetation classification or exclusion clause:** Class A Forest **Description/justification of classification:** Overstorey of connected mature and regrowth Eucalypt trees with canopy foliage cover 30-70% and grassy and shrubby understorey.	
Photo ID: 8 **Plot Number:** 1 **Vegetation classification or exclusion clause:** Class A Forest **Description/justification of classification:** Overstorey of connected mature and regrowth Eucalypt trees with canopy foliage cover 30-70% and grassy and shrubby understorey.	
Photo ID: 9 **Plot Number:** 1 **Vegetation classification or exclusion clause:** Class A Forest **Description/justification of classification:** Overstorey of connected mature and regrowth Eucalypt trees with canopy foliage cover 30-70% and grassy and shrubby understorey.	
Photo ID: 10 **Plot Number:** 1 **Vegetation classification or exclusion clause:** Class A Forest **Description/justification of classification:** Young blue gum plantation	

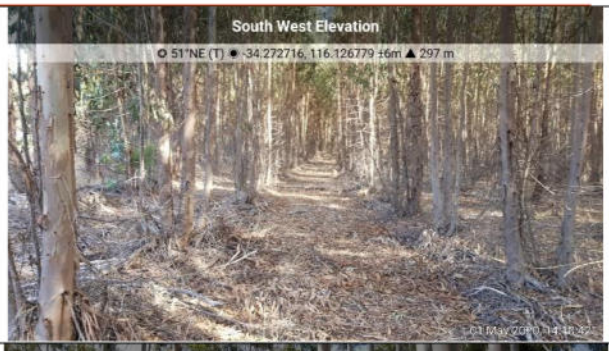
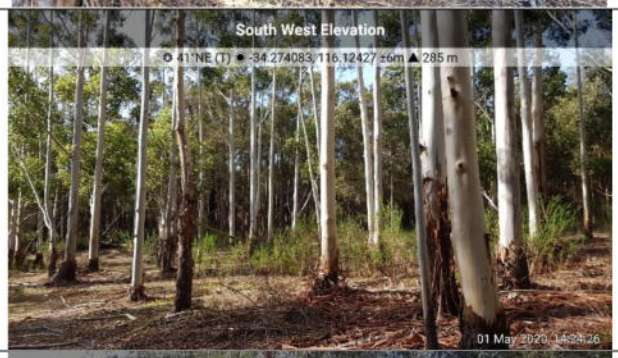
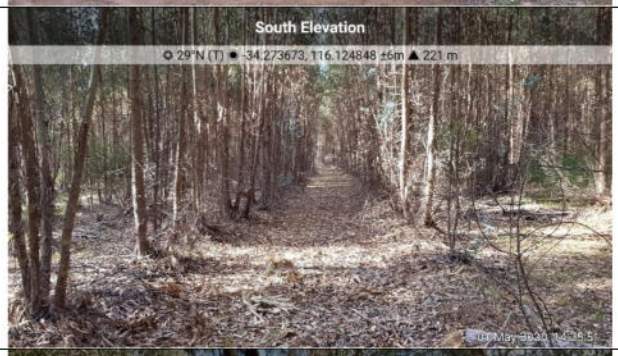
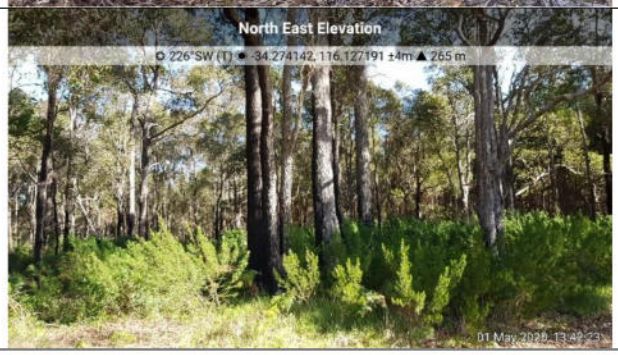
Photo ID: 11 **Plot Number:** 1 **Vegetation classification or exclusion clause:** Class A Forest **Description/justification of classification:** Young blue gum plantation	
Photo ID: 12 **Plot Number:** 1 **Vegetation classification or exclusion clause:** Class A Forest **Description/justification of classification:** Stand of native eucalypts trees with canopy cover > 30%.	
Photo ID: 13 **Plot Number:** 1 **Vegetation classification or exclusion clause:** Class A Forest **Description/justification of classification:** Young blue gum plantation	
Photo ID: 14 **Plot Number:** 1 **Vegetation classification or exclusion clause:** Class A Forest **Description/justification of classification:** Young blue gum plantation	
Photo ID: 15 **Plot Number:** 2 **Vegetation classification or exclusion clause:** Class A Forest **Description/justification of classification:** Overstorey of connected mature and regrowth Eucalypt trees with canopy foliage cover 30-70% and grassy and shrubby understorey.	

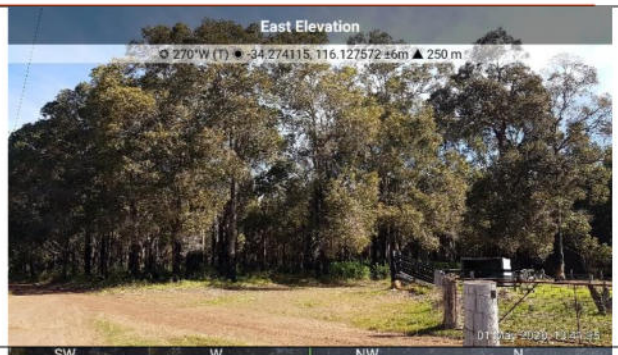
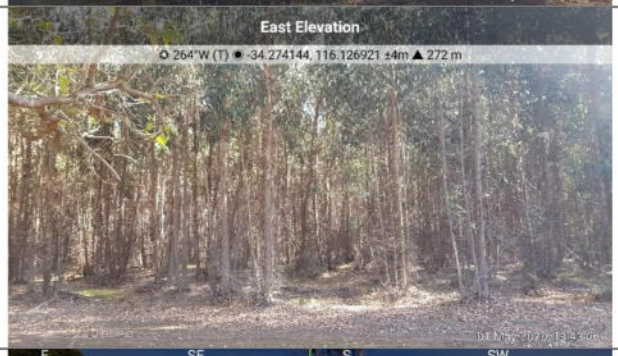
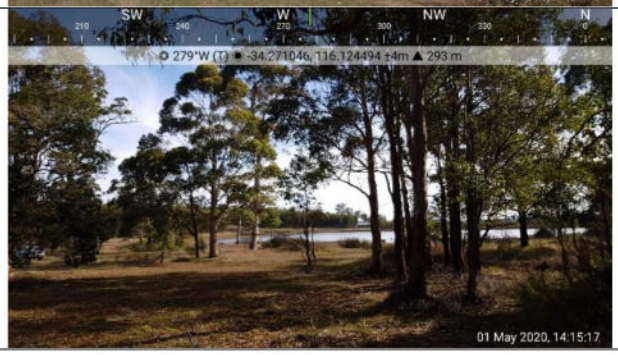
Photo ID: 16 **Plot Number:** 2 **Vegetation classification or exclusion clause:** Class A Forest **Description/justification of classification:** Overstorey of connected mature and regrowth Eucalypt trees with canopy foliage cover 30-70% and grassy and shrubby understorey.	
Photo ID: 17 **Plot Number:** 2 **Vegetation classification or exclusion clause:** Class A Forest **Description/justification of classification:** Strip of connected mature and regrowth Eucalypt trees with canopy foliage cover 30-70% and grassy and shrubby understorey.	
Photo ID: 18 **Plot Number:** 2 **Vegetation classification or exclusion clause:** Class A Forest **Description/justification of classification:** Young blue gum plantation	
Photo ID: 19 **Plot Number:** 3 **Vegetation classification or exclusion clause:** Class B Woodland **Description/justification of classification:** Isolated mature eucalypts with disturbed understorey and grass dominated ground fuels	
Photo ID: 20 **Plot Number:** 3 **Vegetation classification or exclusion clause:** Class B Woodland **Description/justification of classification:** Isolated mature eucalypts with disturbed understorey and grass dominated ground fuels	

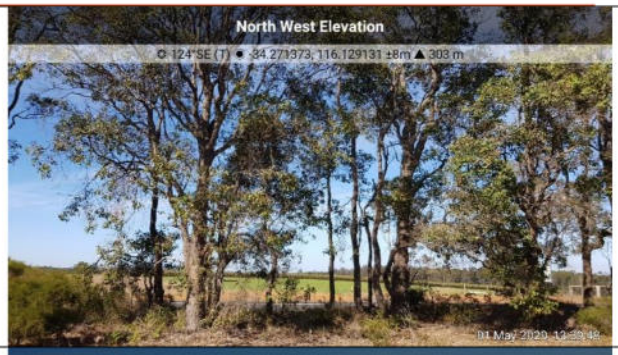
Photo ID: 21 **Plot Number:** 3 **Vegetation classification or exclusion clause:** Class B Woodland **Description/justification of classification:** Strip of eucalypt trees between the railway line and highway.	
Photo ID: 22 **Plot Number:** 4 **Vegetation classification or exclusion clause:** Class G Grassland **Description/justification of classification:** Pasture and crops in agricultural paddock	
Photo ID: 23 **Plot Number:** 4 **Vegetation classification or exclusion clause:** Class G Grassland **Description/justification of classification:** Pasture in agricultural paddock	
Photo ID: 24 **Plot Number:** 4 **Vegetation classification or exclusion clause:** Class G Grassland **Description/justification of classification:** Pasture in agricultural paddock	
Photo ID: 25 **Plot Number:** 5 **Vegetation classification or exclusion clause:** Class G Grassland **Description/justification of classification:** Pasture in agricultural paddock	

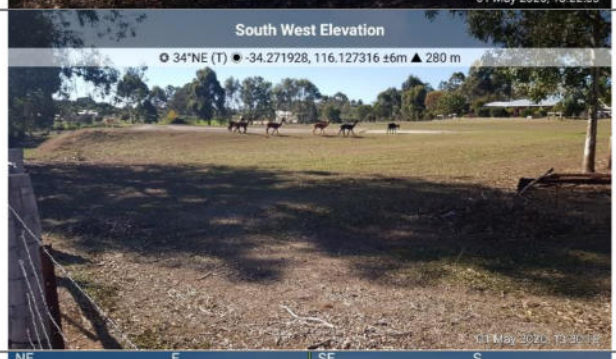
Photo ID: 26 **Plot Number:** 5 **Vegetation classification or exclusion clause:** Class G Grassland **Description/justification of classification:** Pasture in agricultural paddock	
Photo ID: 27 **Plot Number:** 5 **Vegetation classification or exclusion clause:** Class G Grassland **Description/justification of classification:** Pasture in agricultural paddock	
Photo ID: 28 **Plot Number:** 5 **Vegetation classification or exclusion clause:** Class G Grassland **Description/justification of classification:** Pasture in agricultural paddock	
Photo ID: 29 **Plot Number:** 6 **Vegetation classification or exclusion clause:** Class C Shrubland **Description/justification of classification:** Bracken fern partially slashed growing in paddock.	
Photo ID: 30 **Plot Number:** 8 **Vegetation classification or exclusion clause:** Class D Scrub **Description/justification of classification:** Low shrubs and Acacia scrub in railway reserve.	

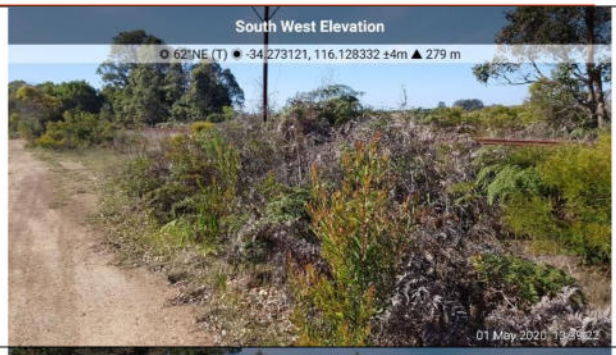
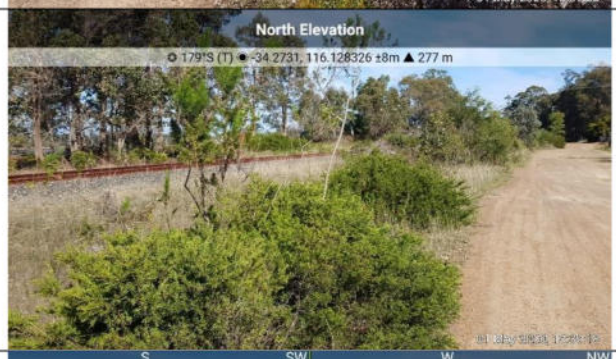
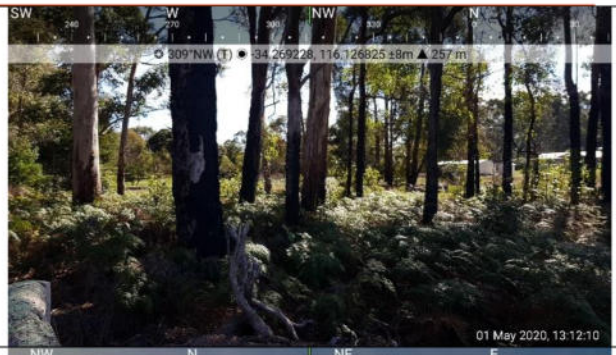
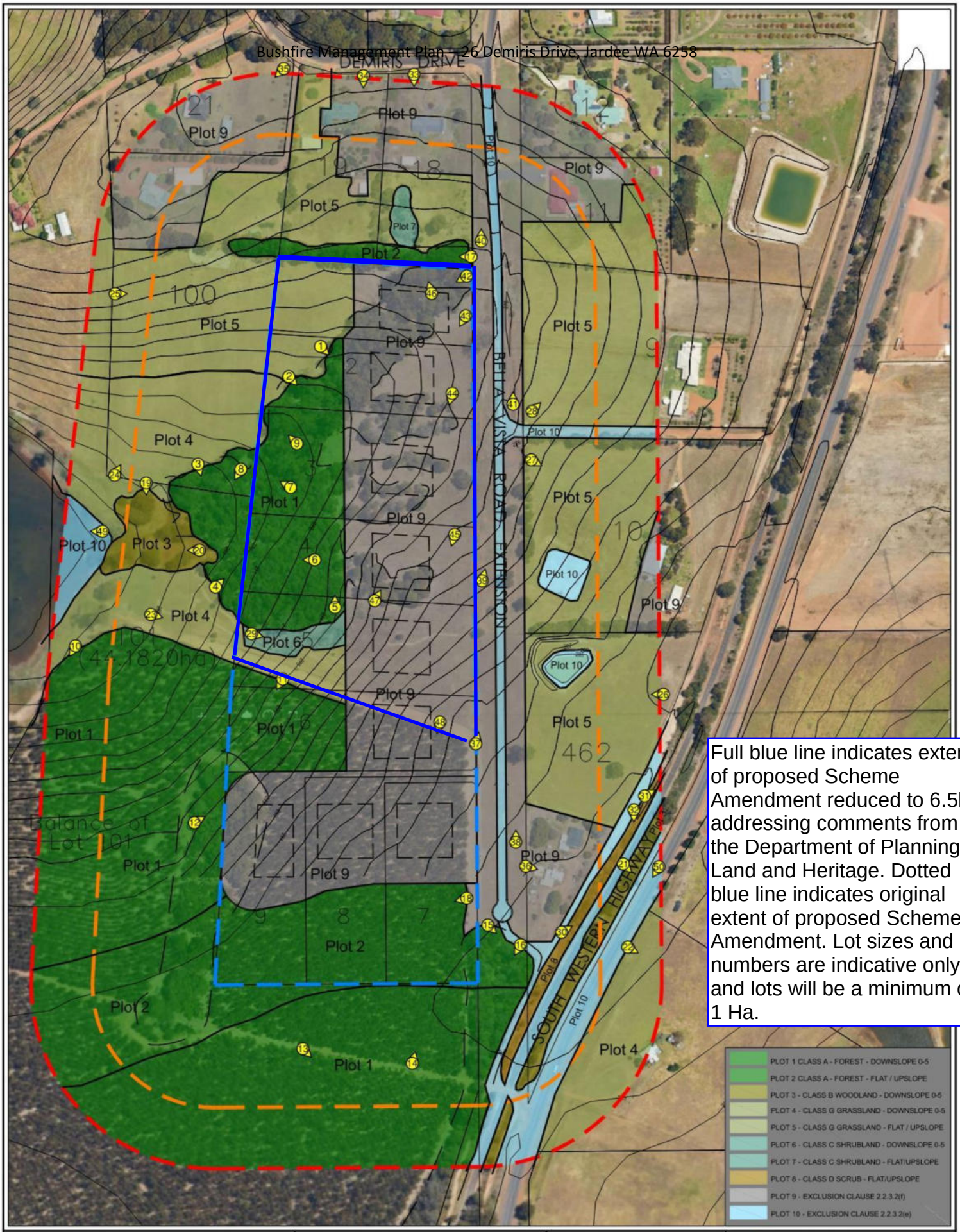
Photo ID: 31 **Plot Number:** 8 **Vegetation classification or exclusion clause:** Class D Scrub **Description/justification of classification:** Low shrubs and Acacia scrub in railway reserve.	
Photo ID: 32 **Plot Number:** 8 **Vegetation classification or exclusion clause:** Class D Scrub **Description/justification of classification:** Low shrubs and Acacia scrub in railway reserve.	
Photo ID: 33 **Plot Number:** 9 **Vegetation classification or exclusion clause:** Exclusion Clause 2.2.3.2(f) **Description/justification of classification:** Managed lawn and garden beds around dwelling.	
Photo ID: 34 **Plot Number:** 9 **Vegetation classification or exclusion clause:** Exclusion Clause 2.2.3.2(f) **Description/justification of classification:** Managed lawn and garden beds around dwelling.	
Photo ID: 35 **Plot Number:** 9 **Vegetation classification or exclusion clause:** Exclusion Clause 2.2.3.2(f) **Description/justification of classification:** Managed lawn, deciduous trees and garden beds around dwelling.	

Photo ID: 36 **Plot Number:** 9 **Vegetation classification or exclusion clause:** Exclusion Clause 2.2.3.2(f) **Description/justification of classification:** Managed lawn garden beds around sheds and dwelling.	
Photo ID: 37 **Plot Number:** 9 **Vegetation classification or exclusion clause:** Exclusion Clause 2.2.3.2(f) **Description/justification of classification:** Grazed paddock in the road reserve.	
Photo ID: 38 **Plot Number:** 9 **Vegetation classification or exclusion clause:** Exclusion Clause 2.2.3.2(f) **Description/justification of classification:** Grazed paddock in the road reserve.	
Photo ID: 39 **Plot Number:** 9 **Vegetation classification or exclusion clause:** Exclusion Clause 2.2.3.2(f) **Description/justification of classification:** Grazed paddock and some weeds in the road reserve.	
Photo ID: 40 **Plot Number:** 9 **Vegetation classification or exclusion clause:** Exclusion Clause 2.2.3.2(f) **Description/justification of classification:** Slashed road reserve.	

Photo ID: 41 **Plot Number:** 9 **Vegetation classification or exclusion clause:** Exclusion Clause 2.2.3.2 (f) **Description/justification of classification:** Slashed road reserve.	
Photo ID: 42 **Plot Number:** 9 **Vegetation classification or exclusion clause:** Exclusion Clause 2.2.3.2 (f) **Description/justification of classification:** Future Asset Protection Zone and building envelope.	
Photo ID: 43 **Plot Number:** 9 **Vegetation classification or exclusion clause:** Exclusion Clause 2.2.3.2 (f) **Description/justification of classification:** Future Asset Protection Zone and building envelope.	
Photo ID: 44 **Plot Number:** 9 **Vegetation classification or exclusion clause:** Exclusion Clause 2.2.3.2 (f) **Description/justification of classification:** Future Asset Protection Zone and building envelope.	
Photo ID: 45 **Plot Number:** 9 **Vegetation classification or exclusion clause:** Exclusion Clause 2.2.3.2 (f) **Description/justification of classification:** Future Asset Protection Zone and building envelope.	

Photo ID: 46 **Plot Number:** 9 **Vegetation classification or exclusion clause:** Exclusion Clause 2.2.3.2 (f) **Description/justification of classification:** Future Asset Protection Zone and building envelope.	
Photo ID: 47 **Plot Number:** 9 **Vegetation classification or exclusion clause:** Exclusion Clause 2.2.3.2 (f) **Description/justification of classification:** Future Asset Protection Zone and building envelope.	
Photo ID: 48 **Plot Number:** 9 **Vegetation classification or exclusion clause:** Exclusion Clause 2.2.3.2 (f) **Description/justification of classification:** Future Asset Protection Zone and building envelope.	
Photo ID: 49 **Plot Number:** 10 **Vegetation classification or exclusion clause:** Exclusion Clause 2.2.3.2 (e) **Description/justification of classification:** Large dam west of the site.	
Photo ID: 50 **Plot Number:** 10 **Vegetation classification or exclusion clause:** Exclusion Clause 2.2.3.2 (e) **Description/justification of classification:** South Western highway.	



Full blue line indicates extent of proposed Scheme Amendment reduced to 6.5ha addressing comments from the Department of Planning, Land and Heritage. Dotted blue line indicates original extent of proposed Scheme Amendment. Lot sizes and numbers are indicative only and lots will be a minimum of 1 Ha.

Location details:	Demiris Drive & Bella Vista Road, Jardee
Assessment date:	April, 2020
Prepared by:	Bushfire Safety Consulting
Accreditation level:	Level 3 BPAD Practitioner
Accreditation number:	BPAD 23160
Accreditation expiry date:	31st January, 2024
Date aerial photo:	December 2018

FIGURE 4 - VEGETATION CLASSIFICATION MAP (BAL CONTOUR MAP)

0 20 40 60 80 100 120m

NOT TO SCALE @ A3
DATE: FEBRUARY 2023

NORTH

LEGEND:
SUBJECT LAND
ASSESSMENT AREA (150m) FROM THE EXTERNAL BOUNDARY OF THE SUBJECT SITE
ASSESSMENT AREA (100m) FROM THE EXTERNAL BOUNDARY OF THE SUBJECT SITE

SOURCE OF PHOTOGRAPHY: NEARMAP

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Mbl: 0429 949 262
www.bushfiresafetyconsulting.com.au

3.2 Effective Slope

The effective slope immediately north and east of the proposed lots is flat / upslope, the landscape falls downslope towards the dam in the west. The effective slope is outlined in Table 2 and Figure 4.

Table 2. Summary of vegetation type and effective slope

Vegetation Area/ Plot	Applied Vegetation Classification	Effective Slope under the Classified Vegetation (degrees)
1	Class A Forest	Downslope 0-5˚
2	Class A Forest	Flat / Upslope
3	Class B Woodland	Downslope 0-5˚
4	Class G Grassland	Downslope 0-5˚
5	Class G Grassland	Flat / Upslope
6	Class C Shrubland	Downslope 0-5˚
7	Class C Shrubland	Flat / upslope
8	Class D Scrub	Flat / upslope
9	Exclusion Clause 2.2.3.2 (f)	N/A
10	Exclusion Clause 2.2.3.2 (e)	N/A

3.3 Assessment Outputs

A BAL contour assessment was undertaken according to Appendix 3 of the Guidelines and the results are found in the BAL Contour Map at Figure 5**.**

A Method 1 BAL Assessment was undertaken to determine the BAL contours impacting the site.

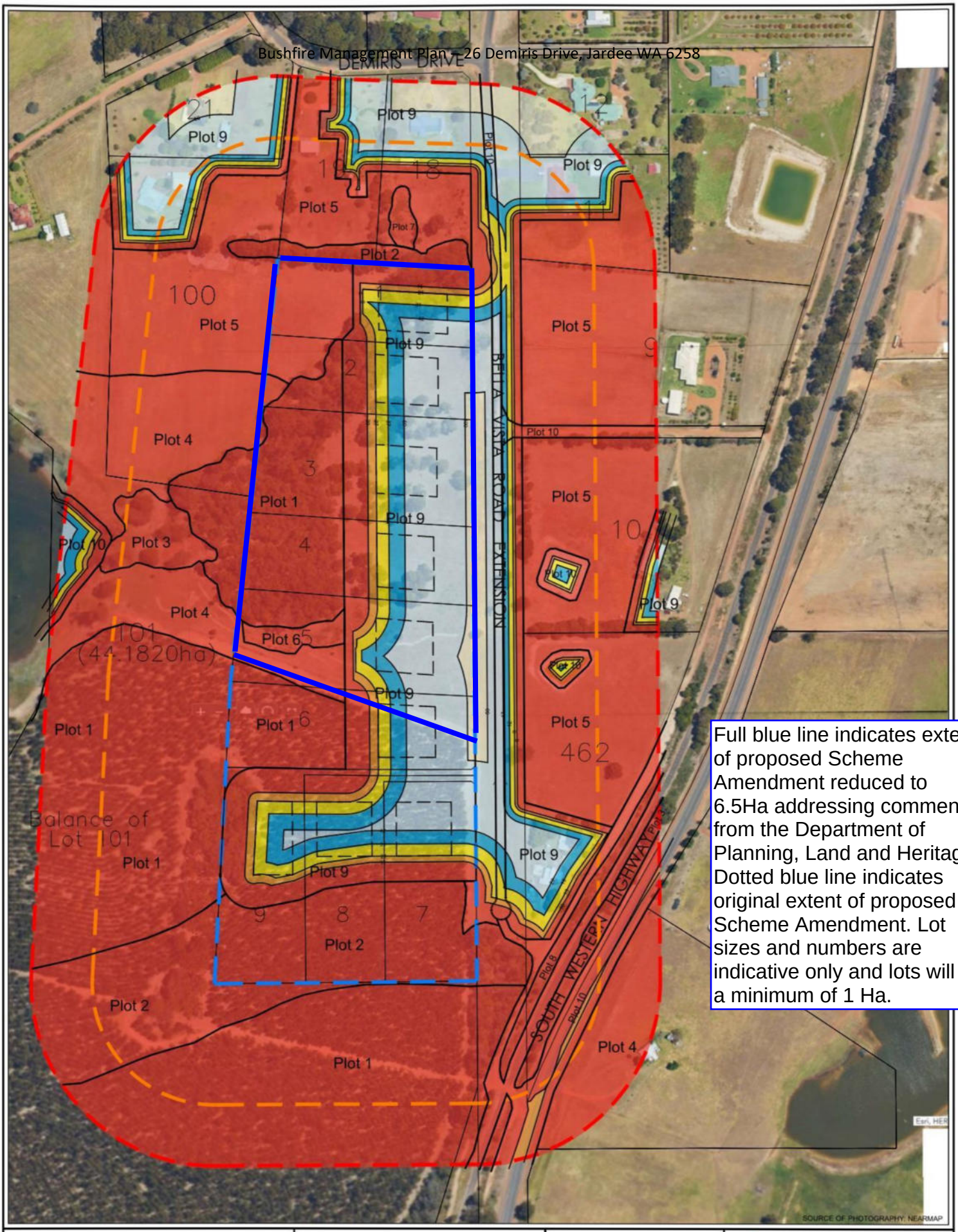
Table 3. Summary of assessment outputs

Building Envelope on Lot	Plot No. Applied Vegetation Classification	Effective slope	Separation distance to Classified Vegetation (metres)	Highest BAL Contour
1	Plot 1 - Class A Forest	Downslope 0-5°	30	BAL-29
	Plot 2 - Class A Forest	Flat / upslope	21	BAL-29
	Plot 5 – Class G Grassland	Flat / upslope	20	BAL-12.5
2	Plot 1 - Class A Forest	Downslope 0-5°	27	BAL-29
3	Plot 1 - Class A Forest	Downslope 0-5°	27	BAL-29
4	Plot 1 - Class A Forest	Downslope 0-5°	27	BAL-29
5	Plot 1 - Class A Forest	Downslope 0-5°	27	BAL-29
	Plot 4 – Class G Grassland	Downslope 0-5°	27	BAL-12.5
	Plot 6 – Class C Shrubland	Downslope 0-5°	27	BAL-12.5
6	Plot 1 - Class A Forest	Downslope 0-5°	27	BAL-29
7	Plot 2 - Class A Forest	Flat / upslope	21	BAL-29
8	Plot 2 - Class A Forest	Flat / upslope	21	BAL-29
	Plot 1 - Class A Forest	Downslope 0-5°	27	BAL-29
9	Plot 2 - Class A Forest	Flat / upslope	21	BAL-29
	Plot 1 - Class A Forest	Downslope 0-5°	27	BAL-29

The final developed scenario is outlined in Figure 6 as a spatial representation of the bushfire management strategies.

4 IDENTIFICATION OF BUSHFIRE HAZARD ISSUES

The area of immediate bushfire hazard occurs in retained vegetation within the development site in the form of eucalypt forest. The blue gum plantation remains a hazard until it is harvested. Predicted ember attack and radiant heat could impact the site as evident in the BAL Contour Plan (Figure 5).



Full blue line indicates extent of proposed Scheme Amendment reduced to 6.5Ha addressing comments from the Department of Planning, Land and Heritage. Dotted blue line indicates original extent of proposed Scheme Amendment. Lot sizes and numbers are indicative only and lots will be a minimum of 1 Ha.

Location details:	Demiris Drive & Bella Vista Road, Jardee
Assessment date:	April, 2020
Prepared by:	Bushfire Safety Consulting
Accreditation level:	Level 3 BPAD Practitioner
Accreditation number:	BPAD 23160
Accreditation expiry date:	31st January, 2024
Date aerial photo:	December 2018

FIGURE 5
BAL CONTOUR MAP

0 20 40 60 80 100 120m
NOT TO SCALE @ A3
DATE: FEBRUARY 2023
NORTH

INDICATIVE BUSHFIRE ATTACK LEVELS
- BAL LOW
- BAL 12.5
- BAL 19
- BAL 29
- BAL 40
- BAL FLAME ZONE

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5 ASSESSMENT AGAINST THE BUSHFIRE PROTECTION CRITERIA

This report adopts an acceptable solution and performance-based system of control for each bushfire protection criteria. This methodology is consistent with Appendix 4 of the *Guidelines for Planning in Bushfire Prone Areas, Version 1.4 (2021).* The management issues are:

- Location of the Development.
- Siting and Design of Development.
- Vehicular access.
- Water.

Acceptable solutions are proposed for all of the bushfire protection criteria and each illustrates a means of satisfactorily meeting the corresponding performance criteria.

5.1 Compliance Table

Land use planning bushfire risk mitigation strategies are comprehensively detailed in the following sections by providing responses to the performance criteria that fulfil the intent of the bushfire hazard management issues outlined in the *Guidelines for Planning in Bushfire Prone Areas V1.4 (2021).* The compliance checklist is attached as Table 4.

5.2 Additional Management Strategies

A summary of management strategies is outlined in **Figure 6**.

There are no specific Vulnerable or High-Risk Land Uses proposed at the site. Any specific applications will trigger the necessary requirements under State Planning Policy 3.7.

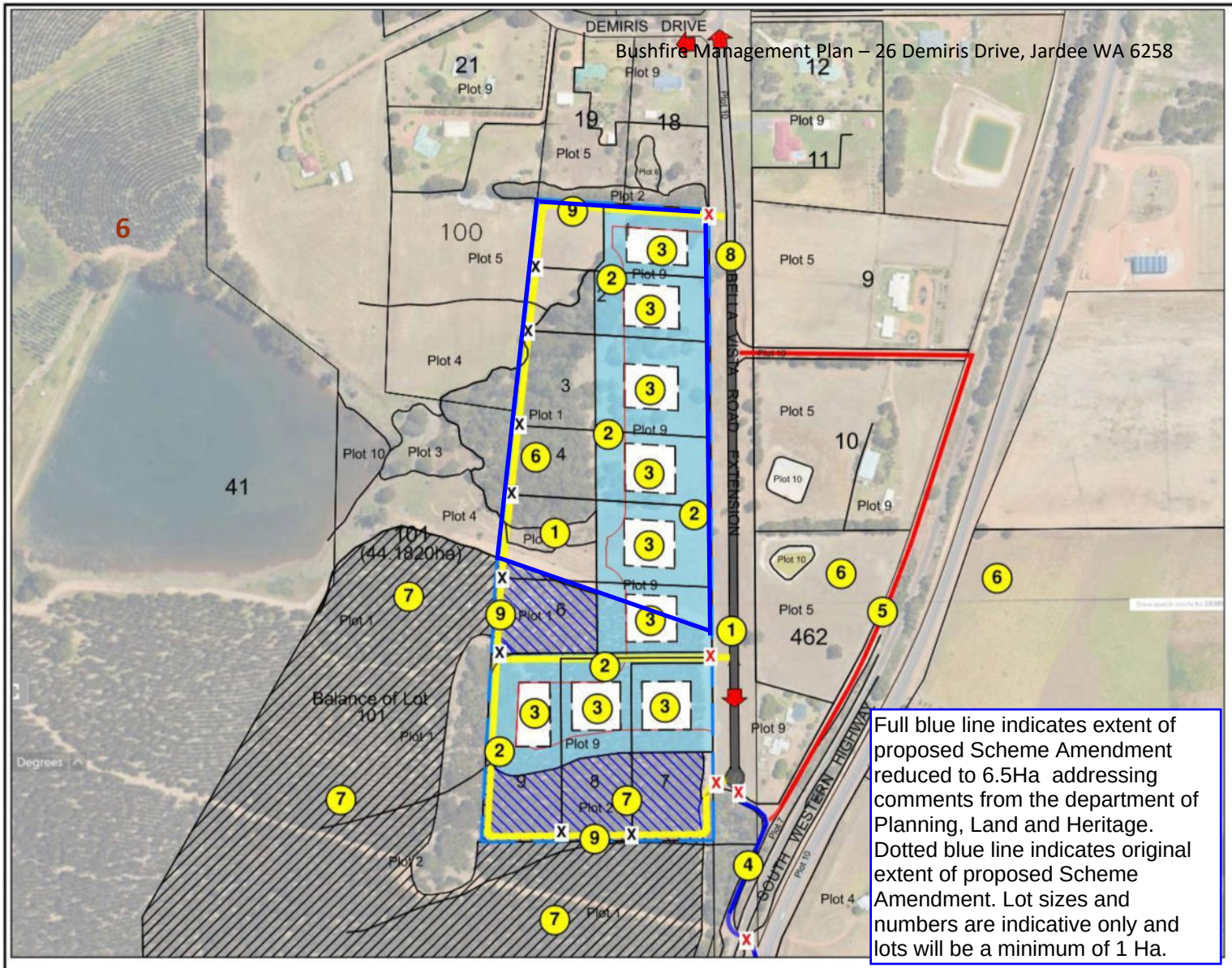
Bushfire Protection Criteria	Method of compliance Acceptable Solutions	Proposed bushfire management strategies
Element 1: Location	A1.1 Development Location	The Method 1 BAL Assessment in this report demonstrates that the bushfire threat from classified vegetation around this site can impact the proposed development, however all lots can accommodate building envelopes to achieve BAL-29 or lower. Full compliance is achieved, see figure 5 and 6.
Element 2: siting and Design	A2.1 Asset Protection Zone (APZ)	The Asset Protection Zone (APZ) is contained solely within the boundaries of the lot on which each building is situated. Proposed neighbouring lots will also accommodate an internal APZ within their boundary which creates and APZ zone that extends adjacent to one another creating a zone between lots that will be managed in a low fuel state in perpetuity. This ensures all future dwellings can be exposed to BAL-29 or less. The APZ will be established and maintained in accordance with the requirements of the standards in Appendix 1. Full compliance is achieved.
Element 3: Vehicular Access	A3.1 Public Roads	Bella Vista Road, Demitris Road and the South Western Highway all comply with minimum public road standards outlined in Appendix 2 (table 6 and column 1 in the guidelines). Full compliance is achieved.
	A3.2a Multiple access routes	All proposed lots have direct driveway access to Bella Vista Road and from there can travel north towards Manjimup or south towards the South Western Highway. The existing 295 m long cul-de-sac (Bella Vista Drive) is being extended to 690 metres long. This has been deliberately designed to allow more direct access a second public road being the South Western Highway. The extension of the cul-de-sac results in it being 90 metres longer that the acceptable solution in SPP 3.7 and the guidelines however this solution achieves the intent of Performance Principle P3 in the Guidelines for Planning in Bushfire Prone Areas V1.4 by providing the best outcome to achieve two access routes to two different destinations. The Performance solution is outlined in Appendix 4 and meets the performance requirements of the development site and; Approval under State Planning Policy No. 3.7 Planning in Bushfire Areas (2021); and The Guidelines for Planning in Bushfire Prone Areas (V1.4) The proposed cul-de-sac will contain a compliant turn-around head and achieve standards outlined in Appendix 2 (Figure 6).

	A3.2b Emergency access way	The existing 800 m Emergency Access Way from the end of Bella Vista Road cul-de-sac does not achieve minimum standards. This will be replaced by a new 160 metres long EAW that achieves all minimum standards. Figure 6 shows gate locations and which will be locked and share a common key. Email confirmation of support from MRWA and Arc Infrastructure for the locked gate as agreed at meeting on 23 April 2021 with Hannah Mackey (Arc Infrastructure) is found in Appendix 5.
	A3.3 Through roads	All proposed lots have direct driveway access to Bella Vista Road and from there can travel north towards Manjimup or south towards the South Western Highway.
	A3.4a Perimeter roads	There are no roads proposed within the site, however a Fire Service Access Route is proposed around the perimeter of the site which will provide perimeter access for fire appliances. See A3.4b below.
	A3.4b Fire service access route	A Fire Service Access Route (FSAR) is proposed within the perimeter of the site to permit fire appliance access around the entire perimeter. The FSAR will be located within the lots. The FSAR will constructed to standards outlined in Appendix 2 and will be ceded to the Shire to ensure consistent and ongoing maintenance occurs. The FSAR is mapped in Figure 6 and is connected to the public road network in 3 places ensure no-one is ever more than 500 metres from the public road. The FSAR will be signposted and gated to Shire of Manjimup standards. Figure 6 shows gate locations and which will be locked and share a common key.
	A3.5 Battle-axe access legs	Two battle axe access lots are created, with the longest being 140 metres long. Minimum standards in Appendix 2 are achieved as found in table 6 column 4 in the guidelines. Full compliance is achieved
Element 4: Water	A4.1 Identification of future water supply	Water supply provided.
	A4.2 Provision of water for firefighting purposes	The development has access to a reticulated water supply. Hydrants will be spaced according to the Water Corporation's No. 63 Water Reticulation Standard.
Element 5: Vulnerable Tourism Land Uses	A5.1 Siting and Design	Not applicable

5.3 Additional Management Strategies

The developer will establish the Asset Protection Zone across all lots and responsibility to maintain the APZ will be transferred to the new owners in perpetuity. A summary of management strategies is outlined in Figure 6.

There are no specific Vulnerable or High-Risk Land Uses proposed at the site. Any specific applications will trigger the necessary requirements under State Planning Policy 3.7.



REQUIREMENTS

1. Bella Vista Road will be extended to provide public road access to the new lots and provide better access through to the South Western Highway at the south of the site. Two access routes are achieved.

2. An overlapping Asst Protection Zone will be established around all building envelopes to ensure dwellings can be sited and achieve BAL-29 and lower.

3. All lots can accommodate a dwelling exposed to BAL-29 or lower.

4. A new 160 m long Emergency Access Way will link the end of the cul-de-sac through to the south Western Highway. Gates installed and locked with shared common key.

5. The existing 800m Emergency Access Way become redundant with the new 160m EAW.

6. The long term bushfire threat to the site is from classified vegetation on and surrounding the lots.

7. Temporary hazard exists in the blue gum plantation at the southern end of the site.

8. The development is in a reticulated area and fire hydrants are provided to standards.

9. A Fire Service Access route is sited within the site, and connects with Bella vista road in three locations to ensure no-one is ever more than 500 metres from a public road. The FSAR will be signposted to Shire of Manjimup standards. Gates installed and left lock/unlocked as marked.

Full blue line indicates extent of proposed Scheme Amendment reduced to 6.5Ha addressing comments from the department of Planning, Land and Heritage. Dotted blue line indicates original extent of proposed Scheme Amendment. Lot sizes and numbers are indicative only and lots will be a minimum of 1 Ha.

LEGEND:

- SUBJECT LAND
- BUILDING ENVELOPES (exposed to BAL-29 and lower)
- BAL-29 / BAL-40 LINE
- OVERLAPPING ASSET PROTECTION ZONE
- EMERGENCY ACCESS WAY
- EXTENSION OF BELLA VISTA ROAD AND CUL-DE-SAC
- TEMPORARY BLUE GUM PLANTATION WITHIN PROPOSED LOTS - ONCE REMOVED BUSHFIRE THREAT REDUCES
- TEMPORARY BLUE GUM PLANTATION ON PARENT LOTS - ONCE REMOVED BUSHFIRE THREAT REDUCES
- ACCESS ROUTES AWAY FROM THE SITE TO DIFFERENT DESTINATIONS
- EXISTING POORLY MAINTAINED EMERGENCY ACCESS WAY
- 6m WIDE FIRE SERVICE ACCESS ROUTE
- X LOCATION OF GATE, COMMON KEY HELD WITH SHIRE OF MANJIMUP
- X GATES INSTALLED, BUT LEFT UNLOCKED

FIGURE 6 - SPATIAL REPRESENTATION OF BUSHFIRE MANAGEMENT STRATEGIES

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SCALE 1:4000 @ A3
DATE: FEBRUARY 2023

Location details:	Demiris Drive & Bella Vista Road, Jardee
Assessment date:	April, 2020
Prepared by:	Bushfire Safety Consulting
Accreditation level:	Level 3 BPAD Practitioner
Accreditation number:	BPAD 23160
Accreditation expiry date:	31st January, 2024
Date aerial photo:	December 2018

6 RESPONSIBILITIES FOR IMPLEMENTATION AND MANAGEMENT OF THE BUSHFIRE MEASURES

Table 5 outlines the initial and ongoing responsibilities, actions and associated works that need to be undertaken by the Developer, neighbours, future landowners and the Shire of Manjimup. The check boxes for implementation actions will be used for subdivision clearance. A Bushfire Planning Practitioner will certify the BAL ratings are correct and necessary implementation actions have been completed.

Table 5. Responsibility for bushfire measures

DEVELOPER – PRIOR TO ISSUE OF TITLES		
No.	**Implementation Action**	**Subdivision Clearance**
1	Establish the APZ to minimum standards within the site as outlined in this report.	☐
2	Ensure that all lots comply with the Shire of Manjimup Control Notice as published.	☐
3	Install the public roads, Emergency Access Way, Fire Service Access Route, gates and signs and cul-de-sac head to standards outlined in this report.	☐
4	Install hydrants to the Water Corporation's No. 63 Water Reticulation Standard.	☐
5	As part of the building license application stage, have the lots/dwelling(s) assessed for the BAL rating by a qualified consultant with BAL rating submitted to support building license stages.	
6	A notification, pursuant to Section 70A of the Transfer of Land Act 1893 is to be placed on the certificate(s) of title of the lots within the Bushfire Prone Area. Notice of this notification is to be included on the diagram or plan of survey (deposited plan). The notification is to state as follows: 'The lot(s) is/are subject to a Bushfire Management Plan.' (Local Government)".	
DEVELOPER – AT SALE OF LOTS		
7	Make a copy of this BMP available to each lot along with *The Homeowners Bush Fire Survival Manual* (or similar suitable documentation) and the Shire of Manjimup's Firebreak Notice.	
LANDOWNER/OCCUPIER – ONGOING MANAGEMENT		
8	Maintain the Asset Protection Zone (APZ) to standards stated in this BMP.	
9	Ensure construction of buildings complies with AS 3959:2018.	
10	If buildings are subject to additional construction in the future, AS 3959:2018 compliance is required.	

SHIRE OF MANJIMUP – ONGOING MANAGEMENT	
11	**Maintain public road, FSAR and the EAW to appropriate standards and ensure compliance with the Shire of Manjimup's Fire Control Notice.**
12	**Provide fire prevention and preparedness advice to landowners upon request, including the *Homeowners Bush Fire Survival Manual, Prepare, Act, Survive* (or similar suitable documentation) and the Shire of Manjimup's Fire Control Notice.**

Certification by Bushfire Consultant

I _____ certify that at the time of inspection, the BAL ratings contained within this BMP are correct; and implementation actions 1 & 4 have been undertaken in accordance with the BMP.

Clearance is recommended.

Signature: _____

Date: _____

7 CONCLUSION

This Plan provides acceptable solutions and responses to the performance criteria that fulfil the intent of the bushfire hazard management issues outlined in the Guidelines for Planning in Bushfire Prone Areas (WAPC 2021 V1.4).

However, community bushfire safety is a shared responsibility between governments, fire agencies, communities and individuals.

The subdivision is located in the bushfire prone area (i.e. within 100 m of classified vegetation) and risk is reduced via compliance with *AS 3959:2018* standards. BAL-29 is not exceeded. An overlapping APZ will be established and maintained across the site to protect individual homes and collectively all development on building envelopes. The ongoing management of the APZ will be the new lot owners responsibility in perpetuity to ensure bushfire threat remains at acceptable levels.

A minimum of two access options and fire hydrant spacing requirements for fire-fighting are met. The proposed development will fall within the acceptable level of risk.

REFERENCES

Standards Australia, 2018. *Construction of buildings in bushfire-prone areas* AS 3959-2018, Standards Australia International Ltd, Sydney.

Western Australian Planning Commission (WAPC), 2015. *State Planning Policy No. 3.7: Planning in Bushfire Prone Areas (SPP3.7)*. December 2015. Western Australian Planning Commission and Department of Planning WA, Government of Western Australia, Perth.

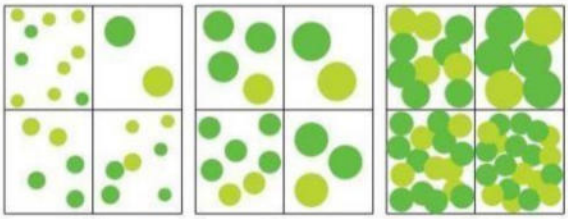
Western Australian Planning Commission (WAPC), 2017. *Guidelines for Planning in Bushfire Prone Areas*. December 2017 V1.3. Western Australian Planning Commission and Department of Planning WA, Government of Western Australia, Perth.

APPENDICES

Appendix 1: Asset Protection Zone Standards
Appendix 2: Vehicular Access Technical Requirements
Appendix 3: Shire of Manjimup Fire Control Notice
Appendix 4: Performance Solution - Element 3 Vehicular Access
Appendix 5: Email confirmations for access arrangements regarding proposed EAW

Appendix 1: Asset Protection Zone Standards

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.

Appendix 2: Vehicle Access Technical Requirements

Table 6: Vehicular access technical requirements

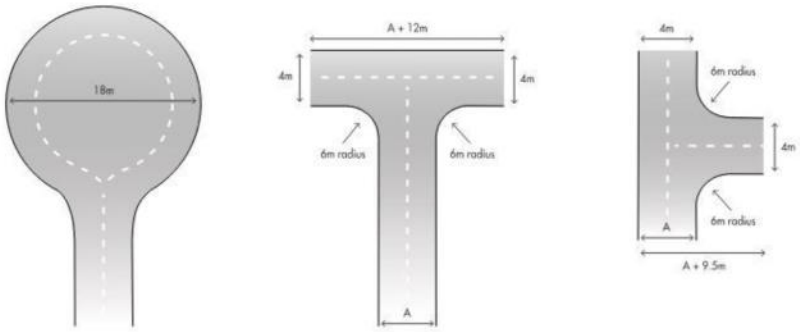
TECHNICAL REQUIREMENTS	1 Public roads	2 Emergency access way[1]	3 Fire service access route[1]	4 Battle-axe and private driveways[2]
Minimum trafficable surface (metres)	In accordance with A3.1	6	6	4
Minimum horizontal clearance (metres)	N/A	6	6	6
Minimum vertical clearance (metres)	4.5			
Minimum weight capacity (tonnes)	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 (metres)		8.5		

Notes:

[1] To have crossfalls between 3 and 6%.

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

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



Appendix 3: Shire of Manjimup Fire Control Notice

DEFINITIONS

BUSH LAND: Land other than pastured or grassed land including plantations of less than (8) hectares.

EXTERNAL BOUNDARY: Means the external perimeter boundary of contiguous land contained within the same ownership, irrespective of whether it contains one or more allotments.

FIRE BREAK: Means a trafficable portion of land being the prescribed width and height, clear of all flammable material, litter and forest fuels.

FLAMMABLE MATERIAL: Means accumulated fuel (living or dead) such as leaf litter, twigs, bark, dead trees and grass over the height of 100mm and anything deemed by an Authorised Officer to be capable of combustion. Flammable Material excludes cultivated plants located in gardens, fruit or vegetables plants, live standing trees or approved structures.

FOREST FUEL: Is any combustible material, dead or alive, in isolation, in clusters or aggregated with other combustible materials. It includes but is not limited to vegetation both on the ground and suspended, leaves, sticks, fallen branches, twigs and bracken. This definition excludes live standing trees.

FIRE SEASON: Means the period of time set out as the *Restricted and Prohibited Burning Season* and any variation. When applying '*Fire Season*' to the summary of requirements for your property the start dates are (*Zone 8 - 11 December 2021* & *Zone 6 - 18 December 2021*).

GRASSED LAND: Land used for the purpose of grazing or cropping.

LITTER: Means leaves, small sticks, twigs and branches immediately above the soil surface.

LIVE STANDING TREE: Means perennial plant having a permanent woody, self-supporting main stem or trunk, usually growing to considerable height and usually developing branches at some distance from the ground. Live standing trees exhibit a distinct crown of foliage with a stem diameter at breast height of at least 100mm. A live standing tree will continue to have sap movement along the cambium layer (layer of living cells) located under the bark.

PLANTATIONS: Land upon which any pine or eucalypt species of tree is planted on an area exceeding (8) hectares.

PLANTATION BOUNDARY: Shall mean contiguous parcels of land under separate ownership, lease or any form of contractual or financial arrangements whatsoever.

TOWN SITE LAND: All land located within the gazetted townsite boundaries of Manjimup, Pemberton, Northcliffe, Walpole, and Settlements of Jardee, Palgarup, Quinninup, Nyamup, Windy Harbour and Deanmill.

TRAFFICABLE: Means a portion of land free from overhanging trees, limbs or vegetation or any other natural or man made object to a vertical height of (5) metres, traversable by a large fire fighting appliance.

PARK LAND CLEARING: Means the removal of forest fuels whilst leaving live standing trees and predominate vegetation so as to maintain a reasonable forest fuel load at the required standard or below.

ZONED LAND: Means all land described in the *Shire of Manjimup Local Planning Scheme No 4.*

REGULATED BURNING TIMES

THESE DATES ARE INCLUSIVE AND SUBJECT TO CHANGE

RESTRICTED	PROHIBITED (NO BURNING)	RESTRICTED
ZONE 8 MANJIMUP / PEMBERTON / QUINNINUP		
9 NOV 2021 TO 21 DEC 2021	22 DEC 2021 TO 14 MAR 2022	15 MAR 2022 TO 26 APR 2022
ZONE 6 NORTHCLIFFE / WALPOLE		
19 NOV 2021 TO 31 DEC 2021	1 JAN 2022 TO 28 FEB 2022	1 MAR 2022 TO 12 APR 2022

Prohibited Burning Time

- *No Burning is permitted.*

Restricted Burning Time

- *Burning can only be carried out with a Permit from your Fire Control Officer.*

For further information regarding fire control

www.manjimup.wa.gov.au
www.doca.wa.gov.au
www.dfes.wa.gov.au

Application to Vary

- *If considered impractical for any reason to comply with this Notice, you must apply to the Shire for an 'Application to Vary' no later than the 1 December 2021.*

SHIRE OF MANJIMUP

Firebreak & Fuel Hazard Reduction Notice 2021 / 2022

Section 33 of the Bush Fires Act 1954



The requirements of this notice must be in place by:

ZONE 8	Manjimup Pemberton Quinninup	11 December 2021
ZONE 6	Northcliffe Walpole	18 December 2021

FIRST AND FINAL NOTICE

RANGERS WILL BE INSPECTING PROPERTIES, PENALTY FOR NON-COMPLIANCE $5,000

FOR EMERGENCIES CALL	000
SHIRE OF MANJIMUP	9771 7777
FIRE DUTY OFFICER A/HOURS	0427 913 252
CHIEF BUSH FIRE CONTROL OFFICER	
Remo Pessotto	0427 270 714
DEPUTY CHIEF BUSH FIRE CONTROL OFFICER	
Brad Wren	0427 959 431

FIRE CONTROL OFFICERS

Brigade	Fire Control Officer	
Balbarrup / Wilgarup	Gary Ryan	9771 2955
Diamond	*Jardee:* Mick Terrigno	0419 864 687 9771 1637
	Middlesex: Rob Thorn	0409 815 977 9771 1703
Dingup	Josh Kanny	0429 881 528
Dunreath	Tom Muir	0418 831 296 9773 1296
Glenoran	Kim Skoss	0475 432 825
Linfarne	Frank Shaw	0473 371 185
Manjimup / Pemberton	Shire Rangers	9771 7777
Mordalup	Mark Muir	0427 691 001 9769 1001
Northcliffe Central	Robert Daubney	9776 6018
Northcliffe Townsite	Paul Owens	0427 667 199
Northcliffe	Rod Parkes	9776 7345
	Peter Russell	9776 7148
	Len Dickson	9776 7071
	John Old	9776 8398
Pemberton Rural	*Browns Road:* Mark Roche	0427 761 510
	Eastbrook: Dennis Barnsby	9776 1114
	Pemberton North: Hugh Jackson	0417 761 557
Perup	Eric Ipsen	0427 831 237
Quinninup	Maurice Humphrey	0419 138 685
Quinninup Town	Mick Eastwood	0438 731 960
Ringbarkers	Paul Tempra	0417 095 899 9771 1311
Seven Day Rd / Appadene	Tom Winfield	0417 964 463
	Peter Parker	0427 761 285
SmithBrook	Bill Rice	0427 057 243 9772 3543
Springfield	Tom Backhouse	0447 872 265 9776 1472
Upper Warren	John Mottram	0417 993 536 9773 1179
Walpole	Glen Burton	0447 822 987
	Richard Williams	0429 442 252
	Rod Leggerini	0439 896 323
Yanmah	Brad Wren	0427 959 431 9772 1397

SUMMARY OF REQUIREMENTS (*WHAT YOU NEED TO HAVE IN PLACE ON YOUR PROPERTY*)

Land Category (where you are unsure of your Land Category please contact the Shire of Manjimup)	The Sections you are required to have in place.							
Land within a Townsite Boundary and land zoned Caravan Park	A							I
Karri Lakes Estate Quinninup		B	C		E			I
Land used for Timber Plantations		B				F		I
Land zoned Rural, Reserves, Rural Small Holdings, General and Priority Agriculture		B	C				G	I
Land zoned Rural Residential, Bush Land Protection, Rural Conservation, Tourist Enterprise ***(Bush Land Properties only)***		B	C	D	E			I
Land zoned Rural Residential, Tourist Enterprise ***(Grassed or Pastured only)***		B					H	I

SECTION A

Remove all *flammable material* from the whole of the property OR all *flammable material* mowed and maintained at a level not exceeding 100mm **throughout the fire season.**

SECTION B

Building Protection Zone - Where a dwelling exists on your property you are required to have a Building Protection Zone for minimum of (20) metres measured from any external wall of a dwelling. ***Subject to the required clearing permit being obtained***, a property owner may extend the Building Protection Zone to a maximum of (40) metres.

For all outbuildings on your property you need only to comply with Clause 1 in this Section.



1. Remove all flammable material within (20) metres of any dwelling or outbuilding.
2. Tree trunks to be free of branches to a height of (2) metres.
3. No trees are to over hang the dwelling.
4. No tall shrub over (1) metre in height or live standing tree is to be located within (2) metres from any part of a dwelling.
5. Shrubs are not to be located under trees, are not to be planted in clumps greater than 5m^2 in area, clumps of shrubs should be separated by at least (5) metres.
6. The Shire of Manjimup permits the clearing of live standing trees in the Building Protection Zone ***subject to the land owner obtaining a clearing permit*** from the Department of Water and Environmental Regulation. Please contact the Shire of Manjimup for assistance.

SECTION C

Fuel Hazard Reduction Bush lands - Forest fuel in your bush land must not exceed the following parameters for your property. (Sampling and fuel calculation should be as approved by the Department of Fire & Emergency Services procedures)

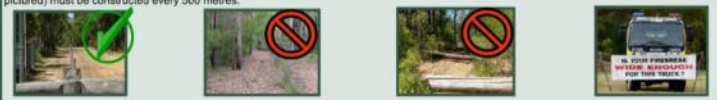
- **Karri:** 15 tonnes per hectare = 1,500 grams of forest fuel per square metre.
- **Jarrah / Marri:** 8 tonnes per hectare = 800 grams of forest fuel per square metre.
- **Mixed Forest:** 15 tonnes per hectare = 1,500 grams of forest fuel per square metre.

Acceptable methods of fuel hazard reduction include Hand Clearing, Mechanical Clearing, Park Land Clearing, Fuel Hazard Reduction Burning.

SECTION D

Where Bush Land exists on your property

A *trafficable firebreak* clear of all *flammable material* and not less than (3) metres wide shall be constructed immediately inside the external boundary of all land and be **maintained throughout the fire season.** Turn around areas designed to accommodate a 3.4 fire fighting appliance (as pictured) must be constructed every 500 metres.



SECTION E

Where *strategic firebreaks* are located on your land, they must be maintained in accordance with this notice or approved subdivision plans, whichever requirement is greater.

SECTION F

1. Construct a *trafficable firebreak* of not less than (15) metres wide around and inside the boundaries of all plantations established after 2009 (existing plantations established in 2009 or earlier require a firebreak of (10) metres wide).
2. Construct a *trafficable firebreak* not less than (6) metres wide within the plantation so as to divide the plantation into compartments not exceeding (30) hectares each.
3. Maintain all *firebreaks* in a *trafficable* condition. Trees on both sides of the firebreaks are to be pruned to a minimum height of (5) metres to allow for unrestricted access to all maintenance and fire fighting vehicles so as to maintain an effective firebreak width.
4. Where dwellings exist within (100) metres of a Plantation, no Plantation trees shall be planted within (50) metres of any existing or proposed dwelling. A further (50) metres of plantation should be pruned and have ground fuels reduced so as to provide a minimum of a (100) metre low fuel zone area immediately surrounding any dwelling.

SECTION G

1. **Abutting a Residential Zone** - Where rural land, whether bushland or pastured, abuts a residential zone boundary a (3) metre firebreak shall be constructed along the common boundary of the residential zone.
2. **Bushland** - Where bushland exceeds more than (1) hectare and abuts a boundary, a trafficable firebreak of not less than (3) metres must be constructed along the boundary and within (15) metres of that boundary.
3. **Grain Crops** - Shall have a (3) metre firebreak around the perimeter of the crop, this firebreak is to remain in place unit the crop is harvested. During harvesting of the crop you must have an operational fire fighting unit full of water (not less than 600 litres) located within the paddock being harvested.
4. Fuel Storage / Hay Sheds - Shall have constructed a (6) metre firebreak immediately adjacent to any fuel storage and or hay sheds.

SECTION H

1. **Fuel Hazard Reduction** - All *flammable material* mowed and maintained at a level not exceeding 100mm and **maintained throughout the fire season.**
2. **Dwelling / Outbuilding** - Where a dwelling or outbuilding exists on your property you need to remove all *flammable material* within (20) metres from any external walls of that building.

SECTION I

Where a *Fire Management Plan* exists for a Subdivision or a property, the requirements of the plan needs to be in place.

Appendix 4: Performance Solution – Element 3 Vehicular Access

1. AIM

- Provide a bushfire protection outcome that meets the performance requirements of the proposed subdivision of the site and;
    - Approval under State Planning Policy No. 3.7 Planning in Bushfire Areas (2021); and
    - The Guidelines for Planning in Bushfire Prone Areas (V1.4)

2. Objectives

- Demonstrate that a 690 metre cul-de-sac and 160 metre Emergency Access Way at this site achieves the intent of Performance Principle P3 in the Guidelines for Planning in Bushfire Prone Areas V1.4 by providing improved Emergency Access Way (EAW) and two access routes to minimum standards.
- Determine compliance with the relevant statements of intent and specific performance principles of the guidelines and element 3.

3. Proposal for 160 metre Emergency Access Way to replace existing 800 m EAW to provide two access routes to two different on the public road system.

The existing 800m EAW does not provide direct access to the south Western Highway from the Bella Vista cul-de-sac, it is not constructed to minimum standards and is not maintained in two wheel drive condition. The proposed EAW will be constructed and maintained to minimum standards and provides direct access from the cul-de-sac head through to the South Western Highway. This provides existing residents on Bella Vista Drive and future residents with a shorter EAW and two different vehicular access routes which connect to the public road network and provide safe access and egress to two different destinations and are available to the residents and fire fighters at all times and under all weather conditions. This is achieved because of the following:

- **3.1 Standard of access way**

  The technical standards for Emergency Access Ways are achieved for both SPP 3.7 (Table 1) in the Guidelines for Planning in Bushfire Prone Areas (V1.4)

TECHNICAL REQUIREMENTS	1 Public roads	2 Emergency access way[1]	3 Fire service access route[1]	4 Battle-axe and private driveways[2]
Minimum trafficable surface (metres)	In accordance with A3.1	6	6	4
Minimum horizontal clearance (metres)	N/A	6	6	6
Minimum vertical clearance (metres)	As outlined in the IPWEA Subdivision Guidelines	4.5		
Minimum weight capacity (tonnes)		15		
Maximum grade unsealed road[3]		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 (metres)		8.5		

Notes:
[1] To have crossfalls between 3 and 6%.
[2] Where driveways and battle-axe legs are not required to comply with the widths in A3.5 or A3.6, they are to comply with the Residential Design Codes and Development Control Policy 2.2 Residential Subdivision.
[3] Dips must have no more than a 1 in 8 (12.5% -7.1 degree) entry and exit angle.

Table 1: Vehicle access technical requirements

3.2 Resident numbers

- The proposed EAW is provided to cater for the additional 9 dwellings proposed on the site. Increased numbers aren't significant and the improved access will service existing residents remove the need to travel on the poorly maintained 800m EAW and provide direct access to the South Western Highway.
- This means numbers are very small and there will be no traffic flow issues. A second access way constructed to EAW standards to the public road network significantly increases the safety to the new residents, existing residents and fire fighters attending the site for fire suppression.

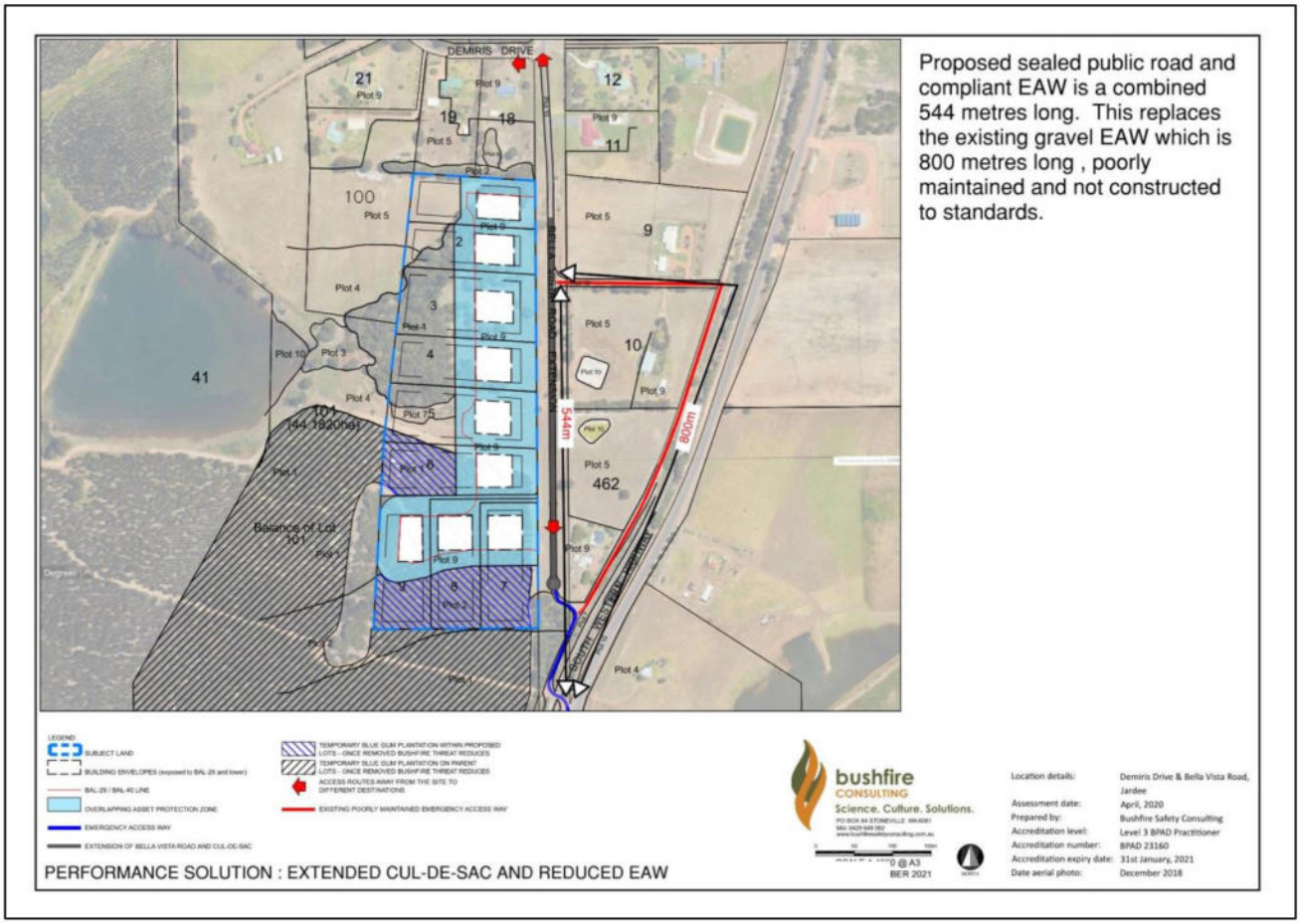


Figure 1: Bushfire Management Strategies showing the proposed combined 544 m long public road and EAW providing a second access route to South Western Highway and replaces the existing 800m access option

3.3 Familiarity with Site and Vehicle Numbers

The site will be a home for the residents and the general public will be discouraged from using the EAW. The EAW access arrangement presents a situation where people accessing their properties are controlled and with an EAW signposting (figure 2) and standards maintained to minimum EAW requirements, it will not pose any issues for residents and fire fighters to identify its locations and use the EAW if required.



Figure 1: Example Emergency Access Only sign to be approved by the Shire of Manjjimup

3.4 EAW is sited adjacent to Moderate and Extreme bushfire hazard area

The proposed EAW is sited on in existing cleared area at the end of the proposed cul-de-sac and provides an improved contingency access option when compared to the existing EAW situation. There are two clear access options for all residents if threatened by bushfire. The sightlines along the EAW are obstructed for only a short distance, it provides the best direct access to the South Western Highway from all lots on Bella Vista Drive.

3.5 Responsibility for standards and on-going management

The EAW will be established by the developer and once standards achieved the Shire of Manjimup will maintain the EAW.

4. Compliance with SPP 3.7, the Guidelines and AS 3959-2009

4.1 Intent and Objectives of State Planning Policy 3.7 (SPP 3.7)

The proposed 544 metre extension to the public road and short 160m EAW access arrangement demonstrates that at this site it provides the same level of protection to existing and proposed residents as would a continuation of the public road. The site is secured and managed, traffic numbers are very low, residents will be familiar with the site and provides direct access to South Western Highway.

The proposed reciprocal/shared access EAW meet all relevant policy objectives of SPP 3.7.

SPP 3.7 Objective 1: *Avoid any increase in the threat of bushfire to people, property and infrastructure. The preservation of life and the management of bushfire impact are paramount*.

- The proposed public road extension and EAW provides the same benefits as a public road at this site. The development will increase existing people numbers by a small number of residents and the additional second access way ensures there is no increase to the predicted threat.

SPP 3.7 Objective 2: *Reduce vulnerability to bushfire through the identification and consideration of bushfire risks in decision-making at all stages of the planning and development process*.

- The bushfire threat and vulnerability has been identified and considered in this assessment including responses to access, water supply and an APZ in the BMP and the method 1 BAL Assessments

SPP 3.7 Objective 3: *Ensure that higher order strategic planning documents, strategic planning proposals, subdivision and development applications take into account bushfire protection requirements and include specified bushfire protection measures*.

- The bushfire risk for Element 2, A3.2a Multiple Access Routes and A 3.2b Emergency Access Ways (EAW) has been quantified using a performance solution with site specific inputs and the bushfire protection measures are outlined in this performance solution.

SPP 3.7 Objective 4: *Achieve an appropriate balance between bushfire risk management measures and, biodiversity conservation values, environmental protection and biodiversity management and landscape amenity, with consideration of the potential impacts of climate change*.

- The subdivision application has no minimal impacts on biodiversity values or conservation values and a clearing permit will be applied for before any clearing is undertaken. The site is currently a rural farm and blue gum plantation and most on-site vegetation is degraded.
-

7.2 Statement of Intent – Element 2 Siting and Design of the Development

Achieving the performance criteria P2 will satisfy the intent of Element 2.

Intent of Element 2: *To ensure that the siting and design of development minimises the level of bushfire impact*

- Achieved by demonstrating that all 9 potential dwellings will not be exposed to a predicted radiant heat flux that exceeds 29kW/m²

7.3 Specific Performance Principle (P3)

Criteria for Performance Principle P3: The internal layout, design and construction of public and private vehicular access and egress in the development allow emergency and other vehicles to move through it easily and safely at all times.

- This is achieved with compliance with acceptable solutions for all relevant access requirements as detailed in the BMP (ie. A3.1, A3.2a, A3.2b, A3.3, A3.4b and A3.5) the demonstrated performance solutions for the proposed EAW (A3.2b) and through roads (A3.3).

5. **Acceptable Solution A3.2B: Emergency Access Way**

A3.2b Emergency Access Way States: Where it is demonstrated that A3.2a cannot be achived due to site constraints, or where an alternative design option does not exist, an emergency access way can be considered as an acceptable solution that meets the following requirements (listed below in Table 3):

A3.2b Acceptable Solution	Performance solution	Compliance
An EAW can be provided where no alternative exists to provide through access to a public road. The EAW is to be provided as an alternative link to a public road during emergencies. The EAW is to meet all of the following requirements : Vehicle access standards as outlined in Table 1.	Acceptable solution – full compliance with Table 1 standards	Yes – compliance with Acceptable Solution
No further than 600 metres from a public road	The proposed EAW is 160 metres in length, but provides the same standard access as a public road, is in a controlled environment managed by local government.	Yes – with performance solution as detailed here.
Provided as an EAW to ensure accessibility to the public and fire services during an emergency	Acceptable Solution is achieved. EAW is secured through the confirmation from Main Roads and Arc Australia (Appendix 5)	Yes – compliance with Acceptable Solution
Must be signposted	EAW will be signposted	Yes signage to Shire of Manjimup standards –

		compliance with Acceptable Solution

Table 3: Comparison between acceptable and performance solution.

6. Conclusion

The proposed 160m EAW when combined with the extension of Bella Vista Cul-de-sac demonstrates that at this site it provides the same protection as would a public road. The site is secured and managed, traffic numbers are very low, residents and fire fighters are likely to be familiar with local conditions and it is sited with good sight lines.
The proposed EAW can achieve all of the Acceptable Solutions and Performance Principles in the Guidelines for Planning in Bushfire Prone Areas V1.4 (2021).

Appendix 5: Email confirmations for access arrangements regarding proposed EAW

Hi

Further to your request below, Main Roads confirms previous discussions in relation to the potential use of the existing access way and at-grade rail crossing on South Western Highway for an EAW, and advise that Main Roads has no objection to this approach, given the specific network context of the request and the existing rail crossing at SLK 283.03.

Regards,

ROAD CORRIDOR PLANNING MANAGER
Metropolitan and Southern Regions / South West
p: +61 9724 5724 | **m:**
w: www.mainroads.wa.gov.au








From:
Sent: Tuesday, 25 October 2022 2:06 PM
To:

Cc:

Subject: 17/056 - Proposed Rural Residential Scheme Amendment and Subdivision

> Some people who received this message don't often get email from Learn why this is important

CAUTION: This email originated from outside of Main Roads. Do not click links or open attachments unless you recognise the sender and know the content is safe.

Hi

I'm contacting you regarding a meeting you attended back on 23 April 2021 in relation to a Scheme Amendment Request for rezoning of an 11ha site in the Shire of Manjimup. The meeting was held at Main Roads in Bunbury and attended by from our office, Main Roads WA, PTA, Shire of Manjimup, Bushfire Safety Consulting, our Client and yourselves (on-line). The purpose of the proposal is to rezone lots in Jardee from 'Priority Agriculture' to 'Rural Residential'. I've attached a Site Plan and a figure from the draft Bushfire Management Plan (BMP) to provide some context.

One of the bushfire management strategies required for the project is to provide an emergency access way (EAW) which will connect Bella Vista Road Extension to South Western Highway only for the purpose of, and in the event of, a bushfire to enable safe access and egress for residents and fire fighters to/from Bella Vista Road (refer attached BMP Figure). The EAW is proposed to extend through land leased by Arc Infrastructure, being the currently unused freight railway through Manjimup. At the meeting on 23 April 2021, Arc Infrastructure advised it would not object to access to cross the railway for the purpose of an EAW for bushfire management purposes provided the access was gated. The Shire of Manjimup has requested that we obtain written confirmation from Arc Infrastructure in this regard. It would therefore be appreciated if you could please provide email confirmation that Arc Infrastructure does not object to a gated EAW extending through land under its lease and management and advise if any forms are required to be completed in this regard.

You will be aware our Client, currently farm Lots 41 and 101 and have a historical permit to cross the railway line for farming purposes. There may be an opportunity to co-locate the gated EAW with the existing farm access route and crossing. The EAW is a mandatory requirement under State Planning Policy 3.7 Planning in Bushfire Prone Areas/Guidelines for Planning in Bushfire Prone Areas Version 1.4 in the absence of a constructed, public road connecting Bella Vista Rd with the SW Highway and a gate was stipulated by Arc Infrastructure as a necessary requirement for the EAW, which was accepted by all parties at the meeting on 23 April 2021 as the only suitable solution for the BMP.

I understand you had no objection to the EAW, it would also be appreciated if you could please confirm via email that this is the case?

Look forward to hearing from you all.

Should you have any queries, please do not hesitate to contact

Regards

Taylor Burrell Barnett

Senior Associate

T 9226 4276 | M |
Level 7/160 St Georges Terrace, Perth WA 6000

My work days this week are Wednesday and Friday with intermittent availability on other days.



Hi

Arc has no objection to this proposal, please advise if the plan changes.

Kind regards

Property Contracts Specialist

Arc Infrastructure
Level 3, 1 George Wiencke Drive, Perth Airport, WA, 6105
GPO Box S1411, Perth WA 6845

T – (08) 9212 2940 | **M** –

W – arcinfra.com

Please consider the environment before printing this e-mail.

From:
Sent: Wednesday, 16 November 2022 9:35 AM
To:

Cc:

Subject: RE: 17/056 - Proposed Rural Residential Scheme Amendment and Subdivision

External Email - Please be cautious
This email was sent from outside of your organisation

Hi – just following up on my email below, have you had a chance to consider?

Many thanks

Taylor Burrell Barnett

Senior Associate

T 9226 4276 | M
Level 7/160 St Georges Terrace, Perth WA 6000

My work days this week are Wednesday and Thursday with intermittent availability on other days.

From:
Sent: Wednesday, 2 November 2022 2:35 PM
To:
Cc:

Subject: 17/056 - Proposed Rural Residential Scheme Amendment and Subdivision

Hi

The EAW is following the Bella Vista road reserve and is in lieu of constructing Bella Vista Road which would require a level crossing (railway) and intersection to South Western Highway which wasn't supported by PTA or MRWA. The compromise was a gated EAW so that access across the railway and to South Western Highway is only in the event of a bushfire.

MRWA has no objection to the proposal, please see attached.

Please let me know if you have any further queries.

Regards

Taylor Burrell Barnett

Senior Associate

T 9226 4276 | M
Level 7/160 St Georges Terrace, Perth WA 6000

My work days this week are Wednesday and Friday with intermittent availability on other days.