Harley Dykstra

SURVEYING | TOWN PLANNING | PROJECT MANAGEMENT

SCHEME AMENDMENT No. 4

Shire of Capel Local Planning Scheme No.8

Lot 49 (158) Capel Drive, Capel

Prepared for

MICK JACKSON

June 2025

DOCUMENT CONTROL

Control Version	Date	Status	Distribution	Comment
A	26/06/2025	Draft	HD	For QA
B	30/06/2025	Draft	Client	For Comment
C	30/06/2025	Final	WAPC/LG	For Lodgement

Prepared for:	Mick Jackson	Date:	30 June 2025
Prepared by:	AR	Job No:	24544
Reviewed by:	KS	Ref:	A

DISCLAIMER

Planning and Development Act 2005

RESOLUTION TO ADOPT AMENDMENT TO LOCAL PLANNING SCHEME

Shire of Capel
Local Planning Scheme No. 8

Amendment No. 4

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

1. Amend Schedule 1 – Additional Uses for zoned land in Scheme area to remove "Additional Use No.5".
2. Amend the scheme map to remove "Additional Use No.5"
3. Amend the scheme map from "Residential R2.5" to "Residential R5"

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

1. It is consistent with the model provisions in Schedule 1 of the Deemed provisions.
2. It is consistent with the objectives of the Local Planning Scheme and Local Planning Strategy for residential zoned land.

Dated this 27 day of Aug 2025.

(Chief Executive Officer)

TABLE OF CONTENTS

TABLES

FIGURES

APPENDICES

1 INTRODUCTION

This Scheme Amendment request has been prepared by Harley Dykstra on behalf of the landowners of Lot 49 (158) Capel Drive, Capel (the 'subject site').

This amendment requests that the Minister for Planning, Lands, Housing and Homelessness approve an amendment to the Shire of Capel Local Planning Scheme No.8 (LPS 8) to recode the subject site from "Residential R2.5" zone to a "Residential R5" zone and to subsequently remove the "Additional Use No.5" designation from the property.

Preliminary discussions with officers at the Shire of Capel have indicated their support for the proposed amendment to LPS 8 as it is consistent with the residential zone and surrounding area and will provide the opportunity to establish additional housing which is in high demand.

The amendment request is further supported by the preparation of a Bushfire Management Plan, a Site and Soil Evaluation and a Concept Plan, demonstrating the capability of the site for development.

A modification to the density coding is considered consistent with the objectives of the Local Planning Strategy and existing state and local planning framework. The amendment is considered to fall under the "Standard" Amendment requirements of the *Planning and Development (Local Planning Schemes) Regulations 2015* and is therefore requested to be considered and assessed under clause 34 as a "Standard Amendment".

The amendment will provide the opportunity for additional urban lots to be established within the Capel townsite which will assist with the ongoing housing shortage experienced within the Shire of Capel and the broader southwest region.

It is respectfully requested that the Shire of Capel favourably consider and support this amendment request to recode the subject site from "Residential R2.5" zone to the "Rural R5" zone and subsequent removal of "Additional Use No.5" to enable future subdivision of the site and remove an historic use that is no longer a suitable for the use of the site.

2 BACKGROUND

2.1 Location, Land Use & Physical Characteristics

The subject site is described as Lot 49 (158) Capel Drive, Capel with an area of 1.0502ha. The site is located within a kilometre of the Capel main street and approximately 25km south of the Bunbury City Centre (refer **Figure 1 – Location Plan** and **Figure 2 – Aerial Image** below).

The property is currently used for low-scale residential purposes, consistent with the land to the north, south and west. Land to the eastern side of Anderson Road contains the Illuka Administration Office and laydown area.

The property is pasture cleared with isolated trees located along the southern boundary and within the eastern portion. The subject land is improved by a dwelling, garage and two sheds.

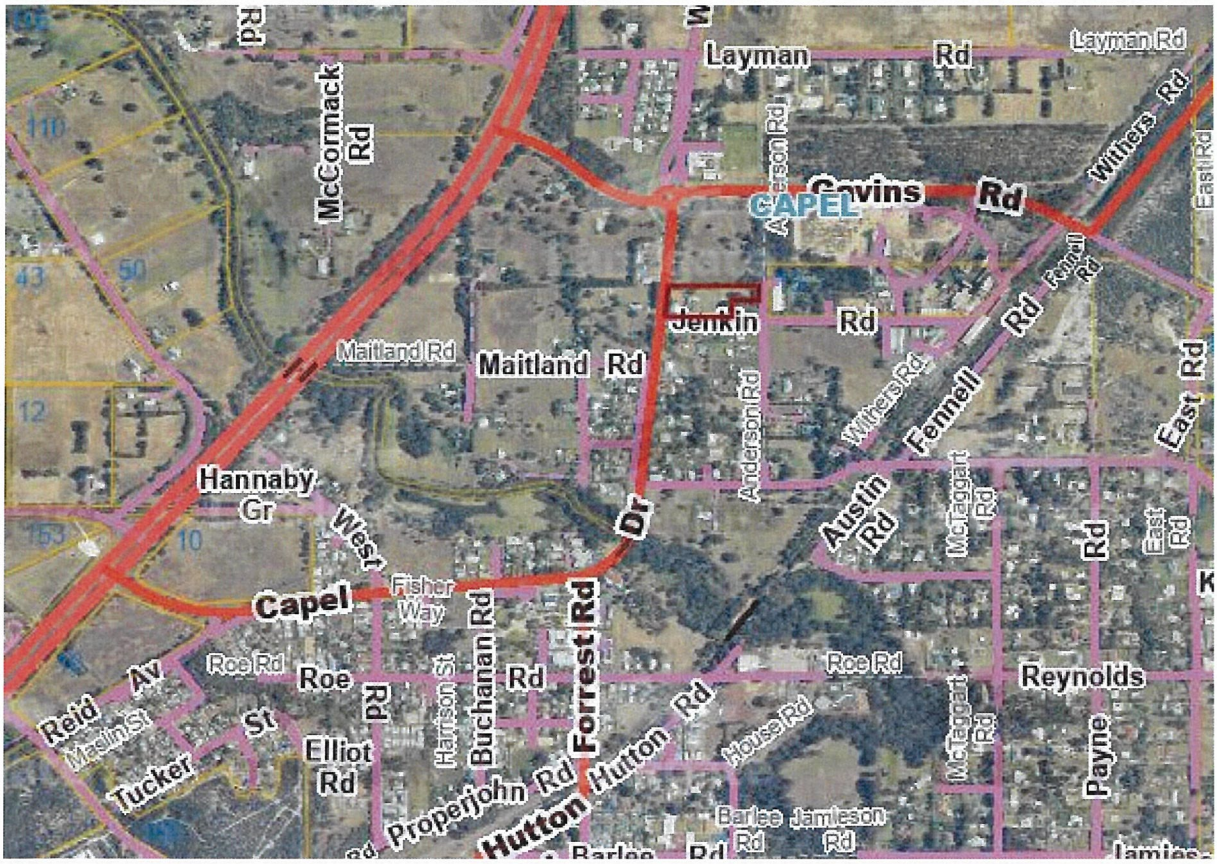


Figure 1 Location Plan

Figure 2 Aerial Image

2.2 Infrastructure and Access

The property is serviced by power and reticulated water to the existing dwelling, which is located within the western portion of the site. Access to the property is by way of an existing crossover onto Capel Drive along the western boundary.

Reticulated sewer is not available for connection to the subject site. The existing dwelling is serviced by an onsite effluent disposal system.

2.3 Ownership

The property details for Lot 49 (158) Capel Drive, Capel are as follows:

LOT NUMBER	PLAN	VOLUME/FOLIO	LOT AREA (HA)	REGISTERED PROPRIETORS
49	DP35520	2046/948	1.0502	MICHAEL ANDREW JACKSON NATALIE MAREE JACKSON

3 PLANNING FRAMEWORK

3.1 State & Regional Planning Context

3.1.1 Greater Bunbury Region Scheme

The Greater Bunbury Region Scheme (GBRS) guides land use and provides the legal basis for planning within the Greater Bunbury Region.

The subject land is zoned 'Urban' under the GBRS. The purpose of the Urban zone is to provide for residential development and associated local employment, recreation and open space, shopping, schools and other community facilities. **Figure 3** depicts an excerpt of the GBRS map, highlighting the subject land in its context with the Capel locality.

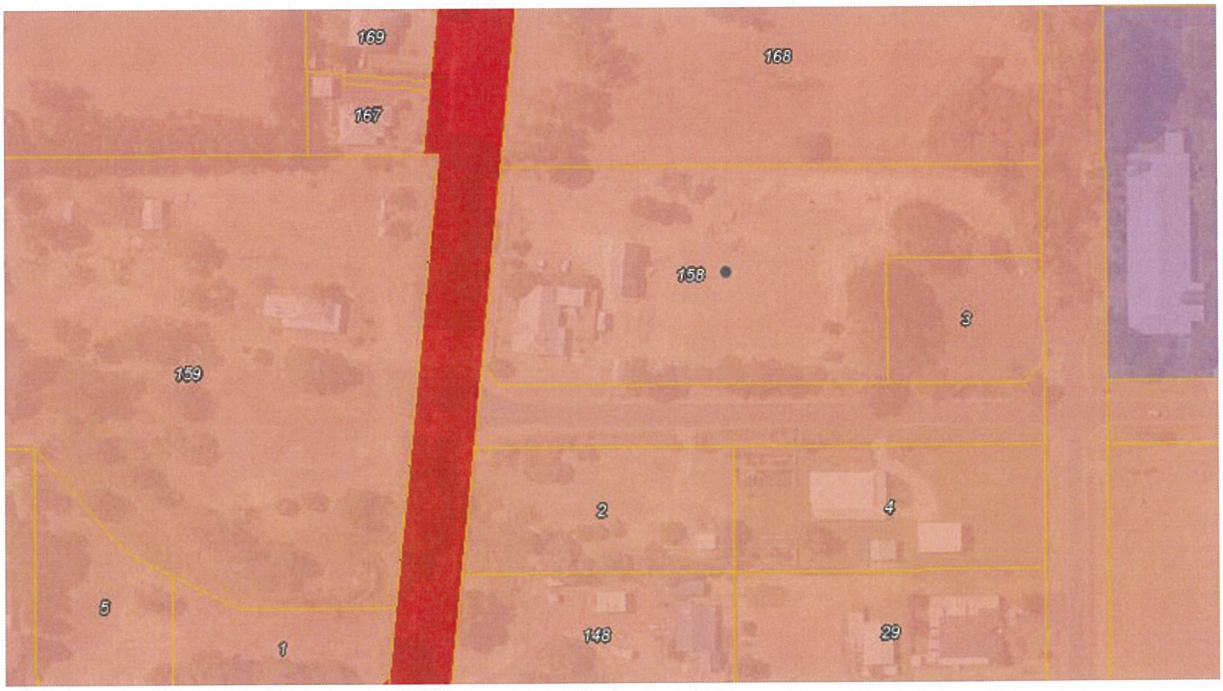


Figure 3 GBRS Mapping

The proposed amendment request is considered consistent with the Urban zoned under the GBRS and in keeping with the development of the Capel townsite.

3.1.2 State Planning Policy 5.4 Road and Rail Noise

The subject land has been identified as being within the trigger distance for State Planning Policy 5.4 Road and Rail Noise (SPP 5.4). SPP 5.4 applies when a noise sensitive development (e.g. dwelling) is proposed within the trigger distance.

Capel Drive is identified as a primary distributor road and therefore carries a 200m wide trigger transport corridor (refer **Figure 4** below), which impacts the subject land. Given the location of the subject land within the Capel townsite, the proposed development being on the eastern side of the existing dwelling adjacent to Capel Drive and the imposed speed limit of 60km/hour within the established residential area, development of the subject site for urban development is considered appropriate and manageable. Further detail with regard to SPP 5.4 is included within section 4.1.4 of this report.

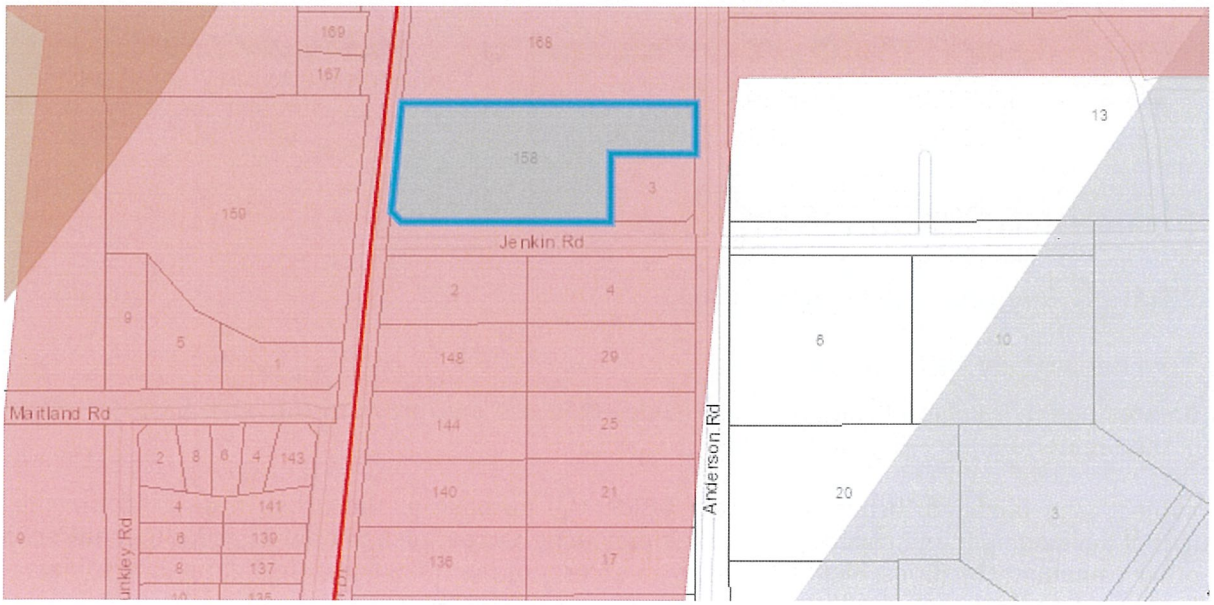


Figure 4 SPP 5.4 Road and Rail Mapping

3.1.3 State Planning Policy 3.7

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

Figure 5 demonstrates that a portion of the site has been designated bushfire prone as identified by the Department of Fire and Emergency's Bushfire Prone mapping. Any application which results in the intensification of the land within a bushfire prone area requires a Bushfire assessment to be undertaken to identify the bushfire risk posed to future development opportunities on the site.

Figure 5 SPP 3.7 Bushfire Prone Mapping

Due to the subject land being identified as bushfire prone, a Bushfire Management Plan has been prepared to support the scheme amendment request. A copy of the BMP is included as **Appendix B**.

3.1.4 Government Sewerage Policy 2016

The Government Sewerage Policy dictates the parameters for effluent disposal in relation to the development of land and buildings and promotes sustainable use and development of land in relation to the provision of sewer services resulting from development.

The scheme amendment request proposes to increase the density of the residential land from R2.5 to R5, creating the ability for lots a minimum of 2000m^2 to be established on the site.

The subject land is not identified within a sewer sensitive area, however as reticulated sewer is not available for connection to the site, a Site and Soil Evaluation has been undertaken and is included as **Appendix C** of this report.

3.2 Local Planning Framework

3.2.1 Shire of Capel Local Planning Strategy

The Shire of Capel Local Planning Strategy (the Strategy) was endorsed by the Western Australian Planning Commission (WAPC) in July 2023 and aims to set out the long-term planning direction for the Shire over a 15-year timeframe. The Strategy provides the rationale for land use and development controls of the Local Planning Scheme and provides an opportunity for an integrated approach to planning across all areas including consideration of social, environmental and economic aspects.

The subject site is identified as 'Existing Urban Land' within the Strategy and adjoins land identified as 'Future Urban Land' to the north, east and west, with land identified as 'Existing Urban Land' to the south and southwest of the site.

The proposed scheme amendment request is considered consistent with the intentions of the Strategy.

3.2.2 Shire of Capel Local Planning Scheme No.8

The Shire of Capel Local Planning Scheme No.8 (LPS 8) seeks to control the development of land within the scheme area to promote and safeguard the health, safety, economic and general welfare of its inhabitants; reserve land for public purposes; control the use of the land through the implementation of zones; and provide standards to secure and maintain proper and orderly planning with the Scheme area.

The subject land is zoned 'Residential' under LPS 8 and carries a density code of R2.5 in accordance with the Residential Design Codes as identified in **Figure 6** below. The land is also subject to an 'Additional Use No.5', the subject of which is included below in **Table 1**.

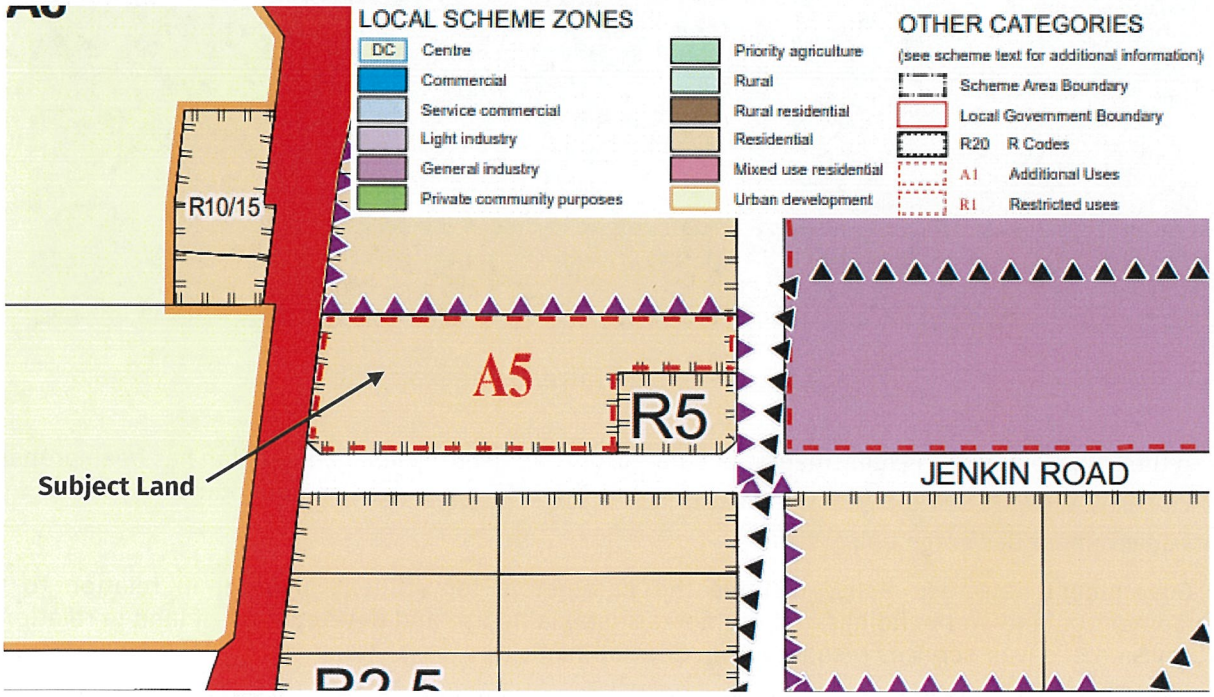


Figure 6 Local Planning Scheme No.8

No.	Description of Land	Additional Use	Conditions
AU5	Lot 49 #158 Capel Drive, Capel	The following land use classes are listed as permitted 'P' uses: • Motel; • Reception Centre; • Restaurant/Café; • Shop.	None

Table 1 Additional Use Table LPS 8

Development of the site will result in an additional 2 – 3 lots which will contribute to the land shortage currently experienced, without impacting the existing urban area or servicing capacity of the area.

It is also proposed as part of this amendment request to remove the historic Additional Use No.5 from the property as identified in **Table 1** above. These uses are attributed to previous landowners and use of the property and are no longer considered required or appropriate for the current and proposed use of the land.

The proposed amendment to modify the density code slightly will not result in any impact on surrounding landholdings or the broader Capel area and will be in keeping with the surrounding lots sizes. Furthermore, removal of the historic additional use on the property will ensure land uses consistent with the residential zone will be maintained.

4 JUSTIFICATION

4.1 Overview of Proposal and Supporting Rationale

The Scheme Amendment proposed to recode the subject site through a scheme amendment request from "Residential R2.5" to "Residential R5" and remove "Additional Use No.5", consistent with the intentions and objectives of the Local Planning Strategy and Scheme. In support of this request, the following additional studies have been undertaken and are included as Appendices to this report:

- Bushfire Management Plan
- Site and Soil Evaluation
- Noise Impact Assessment

Furthermore, a Concept Plan has been prepared to provide an indicative development layout.

4.2 Type of Amendment

Pursuant to regulation 34 of the *Planning and Development (Local Planning Schemes) Regulations 2015* (as amended), the proposed Scheme Amendment represents a 'standard amendment'. The relevant clauses defining a standard amendment are as follows:

Standard Amendment *means any of the following amendments to a local planning scheme –*

a) an amendment relating to a zone or reserve that is consistent with the objectives identified in the scheme for that zone or reserve;
b) an amendment that is consistent with a local planning strategy for the scheme that has been endorsed by the Commission;
c) an amendment to the scheme so that it is consistent with a region planning scheme that applies to the scheme area, other than an amendment that is a basic amendment;
d) an amendment to the scheme map that is consistent with a structure plan or local development plan that has been approved under the scheme for the land to which the amendment relates if the scheme does not currently include zones of all the types that are outlined in the plan;
e) an amendment that would have minimal impact on land in the scheme area that is not the subject of the amendment;
f) an amendment that does not result in any significant environmental, social, economic or governance impacts on land in the scheme area;
g) any other amendment that is not a complex or basic amendment.

The relevant definitions of a 'Standard Amendment', that apply to this amendment request are:

a) an amendment relating to a zone or reserve that is consistent with the objectives identified in the scheme for that zone or reserve;
b) an amendment that is consistent with a local planning strategy for the scheme that has been endorsed by the Commission;
c) an amendment to the scheme so that it is consistent with a region planning scheme that applies to the scheme area, other than an amendment that is a basic amendment;
e) an amendment that would have minimal impact on land in the scheme area that is not the subject of the amendment;
f) an amendment that does not result in any significant environmental, social, economic or governance impacts on land in the scheme area;
g) any other amendment that is not a complex or basic amendment.

The proposed scheme amendment request is considered minor in nature, is consistent with the urban development adjacent to the subject site and relevant planning regulations and framework. The proposed development will have no impact to the surrounding residential area, whilst providing additional land to support the current development shortage within the Capel townsite and broader region.

4.3 Consultation

Preliminary discussions with officers at the Shire of Capel and Department of Planning, Lands and Heritage have occurred prior to the preparation of the amendment request, to determine the level of support for the request.

Officers indicated that the increase in density proposed as part of this amendment request, was considered consistent with the planning framework and unlikely to impact the existing urban development to the area, subject to site specific investigations, which have occurred as part of the preparation of this report.

4.4 Site Investigations and Design

4.4.1 Concept Plan

A concept plan has been prepared for the subject site which identifies an indicative lot yield of 4 lots of 2000m^2 or higher consistent with the proposed density code and includes the existing dwelling and infrastructure within a single lot, adjacent to Capel Drive.

Lots have been designed to incorporate the required minimum lot size, encompass all existing infrastructure into a single lot and in response to lot shape.

A copy of the Concept Plan is included as **Appendix A**.

4.4.2 Infrastructure and Access

The proposed development will result in a potential 2 - 3 additional lots to be created from the subject site. The additional lots will gain access from either Jenkin or Anderson Roads which bound the southern and eastern edges of the subject site.

No additional crossovers are proposed onto Capel Drive as a result of the future development.

All services including telecommunications, reticulated water and power are located within the adjoining road reserves of Capel Drive and Jenkin Road. Connection to this existing infrastructure is proposed to service the proposed development.

Reticulated sewer is not available for connection to the subject site; therefore, the lots will be serviced through the installation of onsite effluent disposal.

4.4.3 Site and Soil Evaluation

A Site and Soil Evaluation (SSE) was undertaken over the subject site to support further development of the eastern portion of the site, noting the existing dwelling is already connected to onsite effluent disposal, which is not proposed to be impacted by any future development. The SSE investigates the existing environment and suitability of the site for onsite effluent disposal and the appropriate location for onsite effluent disposal in accordance with the relevant regulations and guidelines.

The SSE identifies that the subject site is not mapped within a sewage sensitive area nor is it located within an area subject to flooding in a 1 in 100 AEP event and recent groundwater monitoring at a property nearby resulted in groundwater being identified at approximately 3.5m below surface level. The outcome of the SSE results in the site being considered suitable for onsite effluent disposal systems in accordance with the necessary regulations and management measures.

A copy of the Site and Soil Evaluation is included at **Appendix C**.

4.4.4 Bushfire Management Plan

A Bushfire Management Plan (BMP) has been prepared to support the proposed intensification of density at the subject site due to portions of the site being identified as bushfire prone in accordance with DFES Mapping.

The BMP identifies that the subject site is capable of further development with majority of the land identified within a BAL-29 or lower rated area.

Building restrictions through the implementation of building envelopes, building exclusion areas or the like can be incorporated as part of the subdivision planning process to manage portions of the land identified as BAL-40 or higher if required as part of the detailed design.

A copy of the Bushfire Management Plan is included at **Appendix B**.

4.4.5 Noise Impact Statement

A Road and Rail Noise Statement has been prepared and submitted in support of this Scheme Amendment which assesses the acoustic impacts on the proposed new lots in relation to Table 2 of SPP 5.4 Guidelines.

The subject site is bound by Capel Drive, along its western boundary, which is identified as a Primary Distributor Road within the GBRS and an Other Significant Freight/Traffic route in accordance with SPP 5.4 mapping, therefore requiring additional traffic considerations to be undertaken.

The preliminary noise assessment concluded that each lot could be developed without the need for additional mitigation measures. The final positioning of dwellings within proposed Lots B & C may result in the need for Quiet House Package A to be implemented, which can be applied as part of the future subdivision application.

A copy of the Road and Rail Statement is included at **Appendix D**.

5 CONCLUSION

This Amendment request seeks support to enable the recoding of Lot 49 (158) Capel Drive, Capel from 'Residential R2.5' to 'Residential R5' and the subsequent removal of Additional Use No.5 which no longer represents the current use and intent of the property. The request is considered to be consistent with the objectives of the Shire of Capel Local Planning Strategy, the intent of the 'Residential' zone under the Shire of Capel Local Planning Scheme No.8 and other relevant state and local planning framework.

The amendment request seeks to increase the density of the residential lot in accordance with LPS 8 and the Strategy which advocates *"for a range of housing and a choice of residential densities to meet the needs of the community"*.

It is therefore respectfully requested on the basis of the above justified rationale, that the Minister for Planning, Lands, Housing and Homelessness approve the amendment to the Shire of Capel Local Planning Scheme No.8 to recode Lot 49 (158) Capel Drive, Capel from the "Residential R2.5" zone to the "Residential R5" zone and remove "Additional Use No.5".

Planning and Development Act 2005

RESOLUTION TO AMEND LOCAL PLANNING SCHEME

Shire of Capel
Local Planning Scheme No. 8

Amendment No. 4

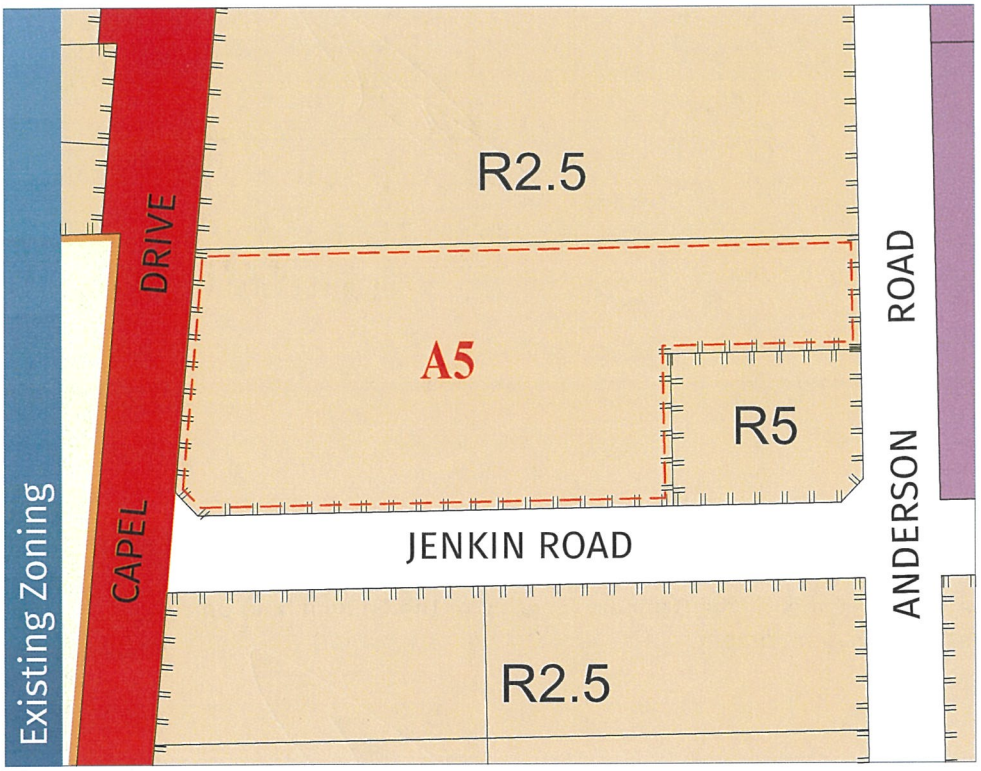
RESOLVED that the local government pursuant to section 75 of the *Planning and Development Act* 2005, amend the above Local Planning Scheme by:

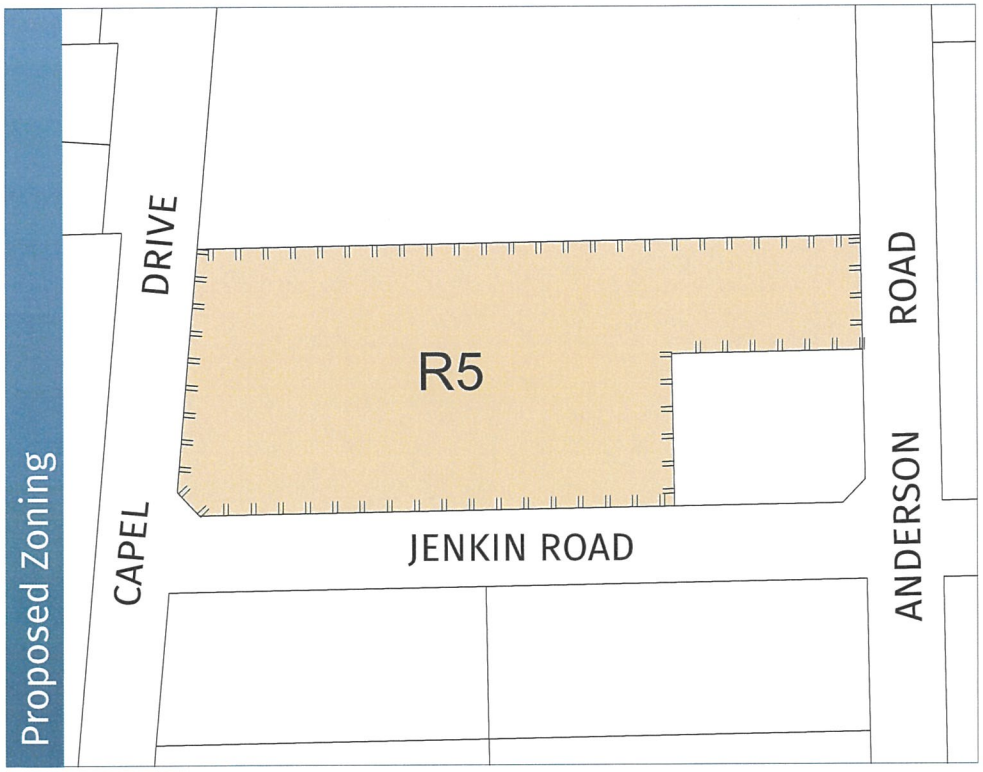
1. Amend Schedule 3 – Additional Uses for zoned land in Scheme area to remove "Additional Use No.5".

2. Amend the scheme map to remove "Additional Use No.5".

3. Amend the scheme map from "Residential R2.5" to "Residential R5".

SHIRE OF CAPEL
Local Planning Scheme No. 8
Amendment No. 4





REGION SCHEME RESERVES

Primary Regional Roads

LOCAL SCHEME RESERVES

Local Roads

ZONES

Urban Development

General Industry

Residential

OTHER

A4 Additional Use

R20 R Codes

Mapping prepared by Harley Dykstra
21 Spencer Street, BUNBURY WA 6230
T: 08 9792 6000
Plan No. | 24544-02A Drawn | TJ 04/06/25

Harley Dykstra
PLANNING & SURVEY SOLUTIONS

COUNCIL ADOPTION

This **standard** Amendment was adopted by resolution of the Council of the Shire of Capel at the Ordinary Meeting of the Council held on the 27 day of AUG, 2025.

(President)

(Chief Executive Officer)

COUNCIL RESOLUTION TO ADVERTISE

by resolution of the Council of the Shire of Capel at the Ordinary Meeting of the Council held on the 27 day of Aug, 2025, proceed to advertise this Amendment.

(President)

(Chief Executive Officer)

COUNCIL RECOMMENDATION

This Amendment is recommended for **support/ not to be supported** by resolution of the Shire of Capel at the Ordinary Meeting of the Council held on the ____ day of ____, 2025 and the Common Seal of the Shire of Capel was hereunto affixed by the authority of a resolution of the Council in the presence of:

_____
(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 **Concept Plan**

LEGEND

PROPOSAL DETAILS	
Subject Land	
Area of Subject Land	1.0502ha
No of Existing Lots	1
No of Proposed Lots	4
Minimum Lot Size	2000m²
Average Lot Size	2626m²
Proposed Lot Boundaries	
LAND DETAILS	
Local Government Area	Shire of Capel
Zoning	Residential R2.5
Existing Boundaries	
Existing Structures	
SERVICING INFORMATION (BYDA)	
Overhead Electricity	AE
Reticulated Water	W
Reticulated Sewer	Not Available
Telecommunications	T
Reticulated Gas	Not Available

Note: All Existing Structures to be Retained

CONCEPT PLAN

Lot 49 on (No. 158) Capel Drive, CAPEL

Plan No.	24544-01
Date	19/05/25
Drawn	TJ
Checked	AR
Revision	A
Scale	1:750@A3

0 10m 20m

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

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

Harley Dykstra
PLANNING & SURVEY SOLUTIONS

Appendix B Bushfire Management Plan

Bushfire Management Plan Coversheet

This Coversheet and accompanying Bushfire Management Plan has been prepared and issued by a person accredited by Fire Protection Association Australia under the Bushfire Planning and Design (BPAD) Accreditation Scheme.

Bushfire Management Plan and Site Details

Site address / Plan reference:	Lot 49 (No.158) Capel Drive				
Suburb:	Capel	State:	WA	Postcode:	N/A
Local government area:	Shire of Capel				
Description of the planning proposal:	Scheme Amendment				
BMP / Reference number:	Lot 49 (No.158) Capel Drive	Version:	V1.1	Date of issue:	20/6/2025
Client / Business name:	Harley Dykstra				

Reason for referral to DFES[1]	Yes	No
Has the BAL been calculated by a method other than Method 1 as outlined in AS3959? (Tick *No* if AS3959 Method 1 has been used to calculate the BAL)		✔
Have any of the bushfire protection criteria elements been addressed through the use of an outcomes-based approach?		✔
Strategic planning proposal (including rezoning applications)	✔	
Local planning scheme amendment containing supplementary provisions, additional to the deemed provisions for bushfire risk management		✔
Where a bushfire local planning policy, or variation to the acceptable solutions or the APZ is proposed		✔
Where there is a conflict of opinion between the decision maker and proponent		✔
Expert technical advice on bushfire behaviour, emergency management, or other occasions where bushfire technical advice is required to support planning decision-making		✔
Expert technical advice on bushfire matters referred to State Administrative Tribunal (SAT) or Development Assessment Panel (DAP)		✔
Comments on future buildings' compliance with FES Commissioner's operational requirement guidelines		✔
Decision maker discretionary referral, (e.g. renewable energy, hazardous materials, vulnerable land use)		✔

If the development is a special development type as listed above, explain why the proposal is considered to be one of the above listed classifications (E.g. considered vulnerable land-use as the development is for accommodation of the elderly, etc.)?

Scheme amendment to change allocated residential density from R2.5 to R5.

Note: The decision maker (e.g. local government or the WAPC) should only refer the proposal to DFES for comment if one (or more) of the above answers are ticked "Yes".

BPAD Accredited Practitioner Details and Declaration

Name	Accreditation Level	Accreditation No.	Accreditation Expiry
Jemma Douglas	Level 2	38400	February 2026
Company		**Contact No.**	
Bushfire Logic		0410621291	

I declare that the information provided within this bushfire management plan is to the best of my knowledge true and correct.

Signature of Practitioner  Date 20 June 2025

[1] For more information please refer to DFES Referral to DFES Checklist

Bushfire Management Plan

Lot 49 (No.158) Capel Drive, Capel

Shire of Capel

Date: 20 June 2025

Bushfire Logic

ABN: 926 121 79165

LIMITATIONS STATEMENT

This report has been prepared in accordance with the Agreement between Bushfire Logic and the Client. This Bushfire Management Plan has been prepared for the sole purpose of supporting an application for an amendment to Local Planning Scheme No.8 as it applies to Lot 49 (No.158) Capel Drive, Capel (the Site).

In undertaking this work the author(s) have made every effort to ensure the accuracy of the information used. Unless otherwise stated in the report, Bushfire Logic has not independently verified such information and cannot guarantee its accuracy or completeness. Within the limitations imposed by the scope of work, preparation of this report has been undertaken and performed in a professional manner, in accordance with generally accepted practices and using a degree of skill and care ordinarily exercised by reputable bushfire consultants under similar circumstances. No other warranty, expressed or implied, is made.

The measures contained in this Bushfire Management Plan, are considered to be minimum requirements and they do not guarantee that a building will not be damaged in a bushfire, persons injured, or fatalities occur either on the subject site or off the site while evacuating. This is substantially due to the unpredictable nature and behaviour of fire and fire weather conditions. Additionally, the correct implementation of the required bushfire protection measures will depend upon, among other things, the ongoing actions of the landowners and/or operators over which Bushfire Logic has no control. The growth, planting or removal of vegetation, poor maintenance of any fire prevention/mitigation measures, addition of structures not included in this report, or other activity can and will change the bushfire threat to all properties detailed in this report.

Should changes be made to the Site, a new Bushfire Management Plan will be required. All surveys, forecasts, projections and recommendations made in this report associated with the proposed development are made in good faith based on information available to Bushfire Logic at the time. All maps included herein are indicative in nature and are not to be used for accurate calculations. Notwithstanding anything contained therein, Bushfire Logic accepts no Liability, including Liability for Loss in connection with:

- A Claim, damage, or injury to property, or persons caused by fire;
- Further growth, planting or removal of vegetation on the Site;
- Poor maintenance of any fire protection measures;
- Additional structures not included in this assessment; or
- Any other activity that may change the bushfire threat level.

The Client and owner of the site acknowledge that they have been made aware of the exclusions above and that such exclusion of Liability is reasonable in all the circumstances.

This report is valid for a period of two years only from the date of its issue. All BAL ratings identified within this report are indicative only and are required to be verified at the time of construction of individual buildings to ensure appropriate setbacks have been achieve.

DOCUMENT CONTROL: REPORT DETAILS		
REPORT VERSION	**REPORT DATE**	**VERSION DETAILS**
V1.1	20 June 2025	Original
BPAD Practitioner	Jemma Douglas (Level 2)	BPAD-38400

CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

1. INTRODUCTION

Bushfire Logic has been engaged on behalf of the landowners to prepare a Bushfire Management Plan (BMP) to support a Scheme Amendment application proposing an increase in the prescribed density at Lot 49 (No.158) Capel Drive, Capel within the Shire of Capel. The Western Australian Planning Commission (WAPC) will be the determining authority for this Scheme Amendment.

The easter portion of the subject site is within a declared Bush Fire Prone Area 2 (BFP2) and the proposed lots within this mapped area are required to be assessed for compliance with State Planning Policy 3.7 – Bushfire (SPP 3.7) (WAPC, 2024) and the bushfire protection criteria contained within the Planning for Bushfire Guidelines (September 2024) (the Guidelines).

The intent of SPP 3.7 is: "to preserve life and reduce the impact of bushfire on property and infrastructure". This report will undertake an assessment using AS3959:2018 and against the applicable Bushfire Protection Criteria set out within the Guidelines.

1.1 LOCATION

The subject land has a site area of 1.0502ha and is zoned 'Urban' under the Greater Bunbury Region Scheme and 'Residential' with a density of R2.5 under the Shire of Capel Local Planning Scheme No.8 (LPS 8). The site is also listed within the additional use table of LPS 8 as having additional use rights for a motel, reception centre, restaurant/café and shop. The subject site adjoins the Capel Drive which provides access north to Gavins Road and South to Forrest Road and the Bussell Highway (Figure 1).

Address Details	**Street no.**	**Lot no.**	**Street name**
	158	49	Capel Drive
	Suburb & State Capel, Western Australia		
Local government area	Shire of Capel		
Site Area	1.0502ha		
Description of development	Proposed Scheme Amendment – R2.5 to R5 density change		

Figure 1: Location Map for Subject Site

1.2 DEVELOPMENT PROPOSAL

The proposal is for an amendment to LPS 8 to allow for an increase in the prescribed residential density from R2.5 to R5 allowing for the subdivision of the subject site into approximately four lots (Appendix 2: Concept Subdivision Layout).

Existing land use	Existing dwelling and outbuildings
Proposed land use:	Proposed Scheme Amendment – R2.5 to R5 density change
Region Planning Scheme	Urban
Local Planning Scheme Zoning	Residential R2.5
Local Structure Plan:	N/A
Local Planning Policies:	N/A
State Planning Policy 3.7	SPP 3.7 – Section 7.1 – General measures Planning for Bushfire Guidelines – Bushfire Protection Criteria 4 – Strategic Planning

The 2023-2024 review of the Bushfire Prone Area Mapping introduced two distinct bush fire contexts. Area 1 comprises selected suburbs located on the Swan Coastal Plain within the Perth, Peel and

Greater Bunbury Region Schemes. These are areas where the intensity of development and non-contiguous nature of vegetation reduces the risk of landscape scale bush fire. Area 2 comprises the remainder of bushfire prone land within Western Australia. The publicly released Bushfire Prone Area Mapping (OBRM-023) shows that the south-eastern portion of the subject site adjacent to Tern Place is within a declared Bush Fire Prone Area 2 (BFP2) and the proposed lots within this mapped area are subject to assessment of the bushfire risk. It is evident that the bushfire prone area mapping follows the alignment of the Collie River. The Bushfire Prone Area Mapping relating to the subject site is shown in Figure 2 below.

Figure 2: Map of Bushfire Prone Areas and relevance to subject site (OBRM-023)

1.3 STATUTORY FRAMEWORK

This document and the recommendations contained within are aligned to the following policy and guidelines:

- *Planning and Development Act 2005;*
- *Planning and Development (Local Planning Scheme) Regulations 2015*;
- State Planning Policy (SPP) 3.7 - Bushfire (September 2024)
- Planning for Bushfire Guidelines (September 2024)
- *Building Act 2011*;
- *Building Regulations 2012*;
- Building code of Australia (National Construction Code);
- *Fire and Emergency Services Act 1998*;
- AS3959-2018 "Construction of buildings in bushfire-prone areas"; and
- *Bushfires Act 1954*.

2. ENVIRONMENTAL CONSIDERATIONS

2.1 NATIVE VEGETATION –MODIFICATION AND/OR CLEARING

The subject land is clear of vegetation and listed native vegetation complexes having been used for grazing and pasture. A review of the environmental data sets as identified in the Department of Planning Lands and Heritage (DPLH) BMP Template has been undertaken and has not identified any regulated (restricted) vegetation that may be affected by the proposal, see Table 1 Environment Dataset Review.

2.2 REVIEW OF THE ENVIRONMENTAL DATA SETS

Table 1: Environmental Dataset Review

Vegetation Modification and/or Clearing Assessment		
Is modification and/or management of vegetation within the subject lot required?		No native vegetation will be impacted by the subdivision proposal.
Environmental Value	**Mapped as occurring within or adjacent to the project area**	**Description**
Wetlands	Yes	The subject lot is listed as being located within a mapped Multiple Use Palusplain wetland.
Waterway Control Area	No	The subdivision site is not located within the Swan-Canning Water Catchment Area.
Commonwealth Threatened Ecological Communities listed under the *Environment Protection and Biodiversity Conservation Act 1999* (the EPBC Act)	No	The subdivision site does not contain any listed TECs.
Fauna habitat listed under the EPBC Act	Yes	The subdivision site adjoins vegetation listed as containing habitat of a Medium (C) suitability for the Western Ringtail Possum. The site also adjoins vegetation listed as requiring investigation as feeding habitat for the Carnaby's Cockatoo.
Bush Forever Site	No	The subdivision site is not listed as containing any bush forever sites.

DBCA managed lands and waters	No	The site is not impacted by DBCA managed land or waters.
Conservation covenants	No	There are no existing conservation covenants in place for the subdivision site.

2.3 REVEGETATION/LANDSCAPE PLANS

The proposed Scheme Amendment will not result in the creation of new public open space reserves or areas requiring revegetation or landscaping. In this respect, it is not expected that a revegetation plan will be required.

3. BUSHFIRE ASSESSMENT RESULTS

The bushfire assessment for this site has followed the requirements of WAPC Planning for Bushfire Guidelines 2024.

3.1 ASSESSMENT INPUTS

Bushfire Assessment inputs for the proposal have been calculated using the Method 1 BAL Assessment procedures as outlined in AS3959:2018. This incorporates the following factors:

- WA adopted Fire Danger Index (FDI), being FDI 80;
- Vegetation Classes;
- Effective Slope under classified vegetation; and
- Distance between proposed development site and classified vegetation

3.1.1 VEGETATION

A site assessment was undertaken on 17 June 2025. All vegetation within 150m of the subject site has been classified in accordance with Clause 2.2.3 of AS 3959-2018 Simplified Procedure (Method 1). Each vegetation plot with the potential to determine the Bushfire Attack Level is identified in the following pages and shown on Figure 3: *Pre-Development Vegetation Assessment and Photo Points* map on the following page.

A summary of the plot data assessed as per Clause 2.2.3 of AS 3959-2018 is provided below in Table 2 below while detailed plot data is provided in Appendix 1 to this report.

Table 2: Vegetation Classification Table (as per AS3959:2018)

Plot	Vegetation Classification	Effective Slope
1	Class G Grassland	Flat/Upslope
2	Class G Grassland	Downslope >0-5 degrees
3	Class B Woodland	Flat/Upslope
4	Class A Forest	Flat/Upslope
5	Excluded 2.2.3.2 (f) – Low threat vegetation within managed verges of road reserves and public open space reserves	N/A

FIGURE 3: PRE-DEVELOPMENT VEGETATION ASSESSMENT AND PHOTOPOINTS MAP
LOT 49 (NO.158) CAPEL DRIVE, CAPEL

Legend

- Photopoint
- 100m Assessment Boundary
- 150m Assessment Boundary
- Lot Boundary

Vegetation Classification

- Excluded 2.2.3.2 (e)
- Excluded 2.2.3.2 (f)
- Class A Forest
- Class B Woodland
- Class G Grassland

N

Bushfire Logic

20 June 2025

3.2 ASSESSMENT OUTPUT

3.2.1 BUSHFIRE ATTACK LEVEL RESULTS

Figure 4: *Post-Development Vegetation Assessment* provides an indicative vegetation assessment following implementation of the Scheme Amendment and subsequent subdivision application (not subject to this application). Figure 5: *Bushfire Hazard Level Assessment* and Figure 6: *Bushfire Attack Level Contour Map* illustrate the risk of bushfire to the site and the indicative radiant heat and associated indicative BAL ratings that may impact the subject site as the result of the vegetation being retained within the assessment area. The vegetation assessment has been completed in accordance with the SPP3.7, the Guidelines and Method 1 methodology of AS3959-2018. Table 3 provides summary of each of the vegetation plots being retained as part of the Scheme Amendment.

Table 3: Post-Development Vegetation Classification

Plot	Vegetation Classification	Effective Slope	Comment
1	Class G Grassland	Flat/Upslope	Plot 1 contains grassland within the subject lot and the surrounding land within the assessment area. Grassland to the west of the subject land within Plot 1 is outside of the bushfire prone area mapping but has been shown within the post-development assessment vegetation classification. The portions of grassland within the subject site will be modified to a low threat fuel state to facilitate the eventual subdivision of the land. Areas of Plot 1 outside of the subject land will not be altered.
2	Class G Grassland	Downslope >0-5 degrees	Plot 2 contains grassland paddocks and areas of reeds consistent with watercourse vegetation. It is noted that the vegetation within Plot 2 is outside of the bushfire prone area mapping. Not proposed to be altered through the proposed amendment or subsequent subdivision application.
3	Class B Woodland	Flat/Upslope	Existing woodland vegetation within surrounding lots including strands of trees forming dense windbreaks. Not proposed to be altered through the proposed amendment or subsequent subdivision application.
4	Class A Forest	Flat/Upslope	Existing forest vegetation to the north-east of the site. This vegetation has been flagged as potential Western Ringtail Possum and Carnabys Cockatoo habitat. Not proposed to be altered through the proposed amendment or subsequent subdivision application.
5	Excluded 2.2.3.2 (f) – Low threat vegetation within managed verges of road reserves and	N/A	Areas of low threat vegetation including cultivated gardens within adjacent residential zoned lots associated with existing dwellings. These properties are subject to compliance with the Shire's Firebreak Notice and are required to be maintained in perpetuity.

	public open space reserves		

Table 4 provides an indication of the level of bushfire attack (i.e. the radiant heat flux) that may be received by the lots shown on the concept subdivision plan and the separation distances that will be required for new buildings from each of the vegetation plots.

Table 4: AS3959:2018 Vegetation Separation Distances to Corresponding Radiant Heat Impact

Plot	Vegetation Classification	Effective Slope	Separation distances required (m)				
			BAL-FZ	BAL-40	BAL-29	BAL-19	BAL-12.5
1	Class G Grassland	Flat/Upslope	<6	6-<8	8-<12	12-<17	17-<50
2	Class G Grassland	Downslope >0-5 degrees	<7	7-<9	9-<14	14-<20	20-<50
3	Class B Woodland	Flat/Upslope	<10	10-<14	14-<20	20-<29	29-<100
4	Class A Forest	Flat/Upslope	<16	16-<21	21-<31	31-<42	42-<100
5	Excluded 2.2.3.2 (f) – Low threat vegetation within managed verges of road reserves and public open space reserves	N/A	N/A No separation requirements				

FIGURE 4: POST-DEVELOPMENT VEGETATION ASSESSMENT
LOT 49 (NO.158) CAPEL DRIVE, CAPEL

Legend

- Photopoint
- 100m Assessment Boundary
- 150m Assessment Boundary
- Lot Boundary

Vegetation Classification

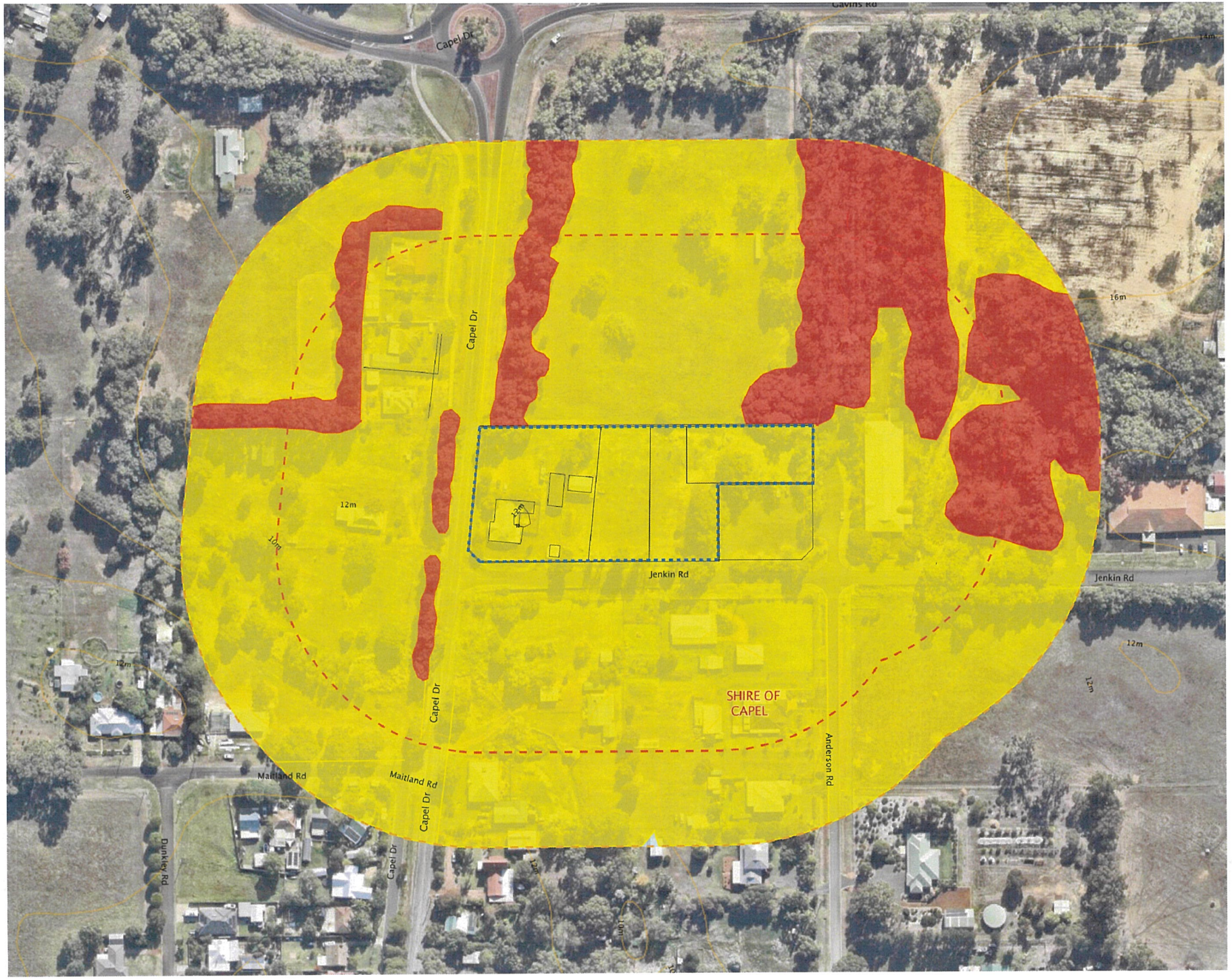
- Excluded 2.2.3.2 (e)
- Excluded 2.2.3.2 (f)
- Class A Forest
- Class B Woodland
- Class G Grassland

N

Bushfire Logic

20 June 2025

FIGURE 5: BUSHFIRE HAZARD LEVEL ASSESSMENT
LOT 49 (NO.158) CAPEL DRIVE, CAPEL



Legend

- Photopoint
- 100m Assessment Boundary
- 150m Assessment Boundary
- Lot Boundary

Bushfire Hazard Level

- Extreme Hazard
- Moderate Hazard
- Low Hazard

N

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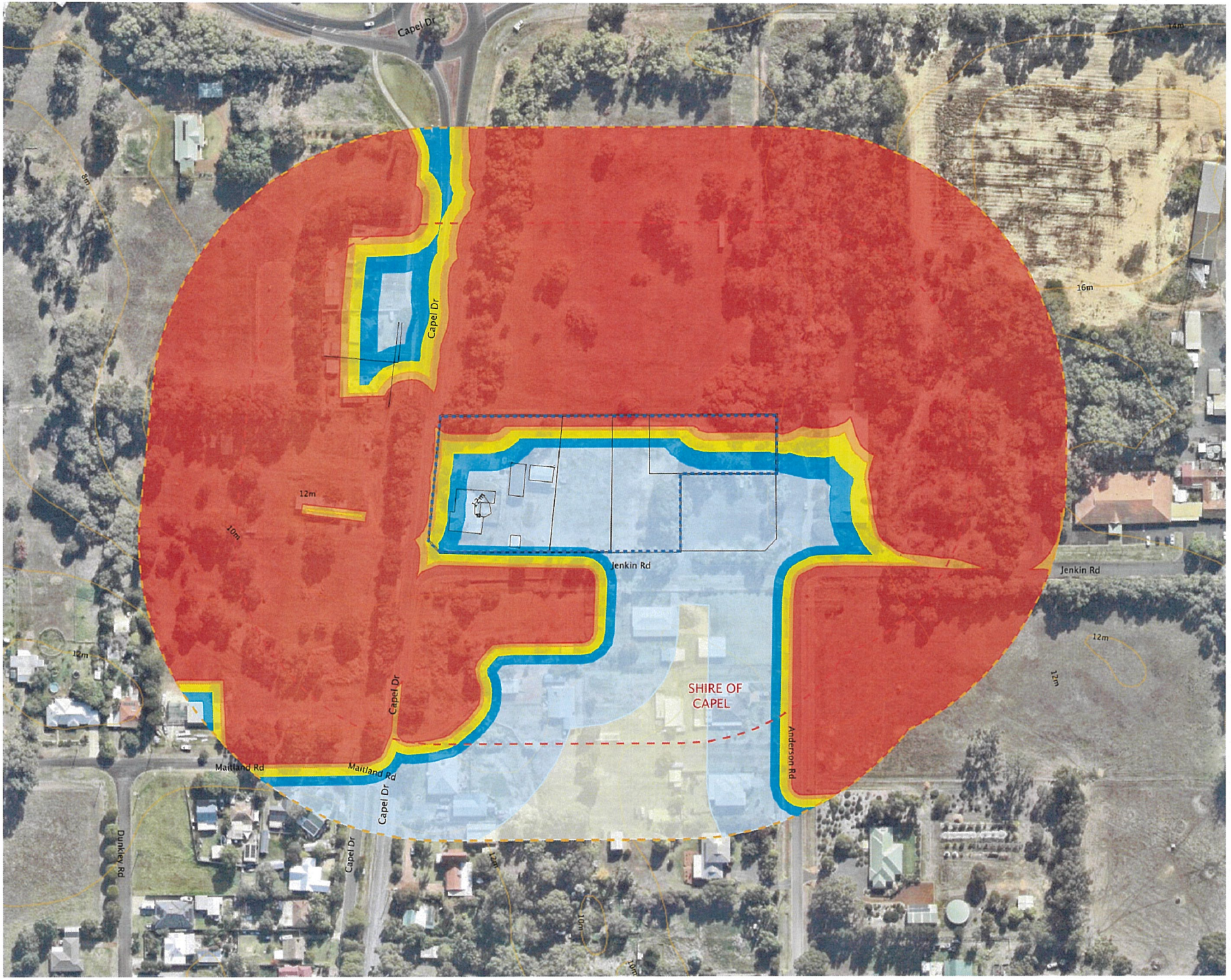
20 June 2025

FIGURE 6: BUSHFIRE ATTACK LEVEL CONTOUR MAP
LOT 49 (NO.158) CAPEL DRIVE, CAPEL



Legend

- Photopoint
- 100m Assessment Boundary
- 150m Assessment Boundary
- Lot Boundary

Bushfire Attack Level Contour

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

N

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20 June 2025

4. IDENTIFICATION OF BUSHFIRE HAZARD ISSUES

The purpose of this section is to identify any bushfire hazard issues through an examination of environmental considerations in addition to the bushfire risk assessment. Considerations can include vehicle access constraints both within and adjacent to the site, the location of significant bushfire hazards such as regional reserves or national parks and other relevant bushfire hazards. This is particularly relevant to strategic proposals where consideration of these sorts of factors can assist in determining the suitability of area for development and subdivision or identifying issues that may need to be considered in further detail as part of subsequent planning stages.

4.1 BUSHFIRE CONTEXT AND LANDSCAPE FIRE RISK

The subject site forms part of the Capel townsite urban zone with lower density residential land uses to the south and north, an urban development zone to the west of Capel Drive and general industrial zoned land containing the Iluka Mining Resources industrial site to the east. The broader locality contains predominately mosaic vegetation patterns including existing grassland paddocks, isolated plots of woodland and forest and cleared areas associated with residential, commercial and industrial development.

While the areas of grassland and isolated plots of woodland and forest vegetation may present a risk of bushfire to the subject site if left in an unmanaged state, the extent of vegetation surrounding the site is not consistent with that capable of generating a sustained fire run and bushfire behaviour consistent with a landscape fire event. In this respect, while there remains a risk of bushfire to the subject land, the subject site is not presented with any significant landscape fire risks from the broader locality.

4.2 ACCESS

The subject site is located within an existing urban townsite locality and has direct access to the urban zone and a number of primary, regional and local distributor public road networks. The site is provided with access to Capel Drive which connects directly to the Capel townsite approximately 600 metres to the south. Capel Drive is a Primary Distributor road under the Main Roads road hierarchy and connects to the broader public road network to the north and south and to Bussell Highway further to the west. Bussell Highway is as 'Primary Regional Road' reserve under the GBRS and a Primary Distributor road under the Main Roads road hierarchy. Bussell Highway provide access to both Busselton and Bunbury and further abroad to the Perth and Peel regions.

It is noted that the subject land also has access from Jenkin Road which is an existing no-through road that connects to the Iluka Mining Resources industrial site immediately to the east. As the subject site is located on the corner of Jenkin Road and Capel Drive, the distance from the intersection to the edge of the lot is approximately 135 metres which complies with the no-through road requirements of the Guidelines.

4.3 WATER SUPPLY

A reticulated water supply is available to the subject site. If required, additional hydrants will be provided within the existing road network consistent with Water Corporation standard #63. This can be secured through the subdivision stage.

5. ASSESSMENT AGAINST THE BUSHFIRE PROTECTION CRITERIA

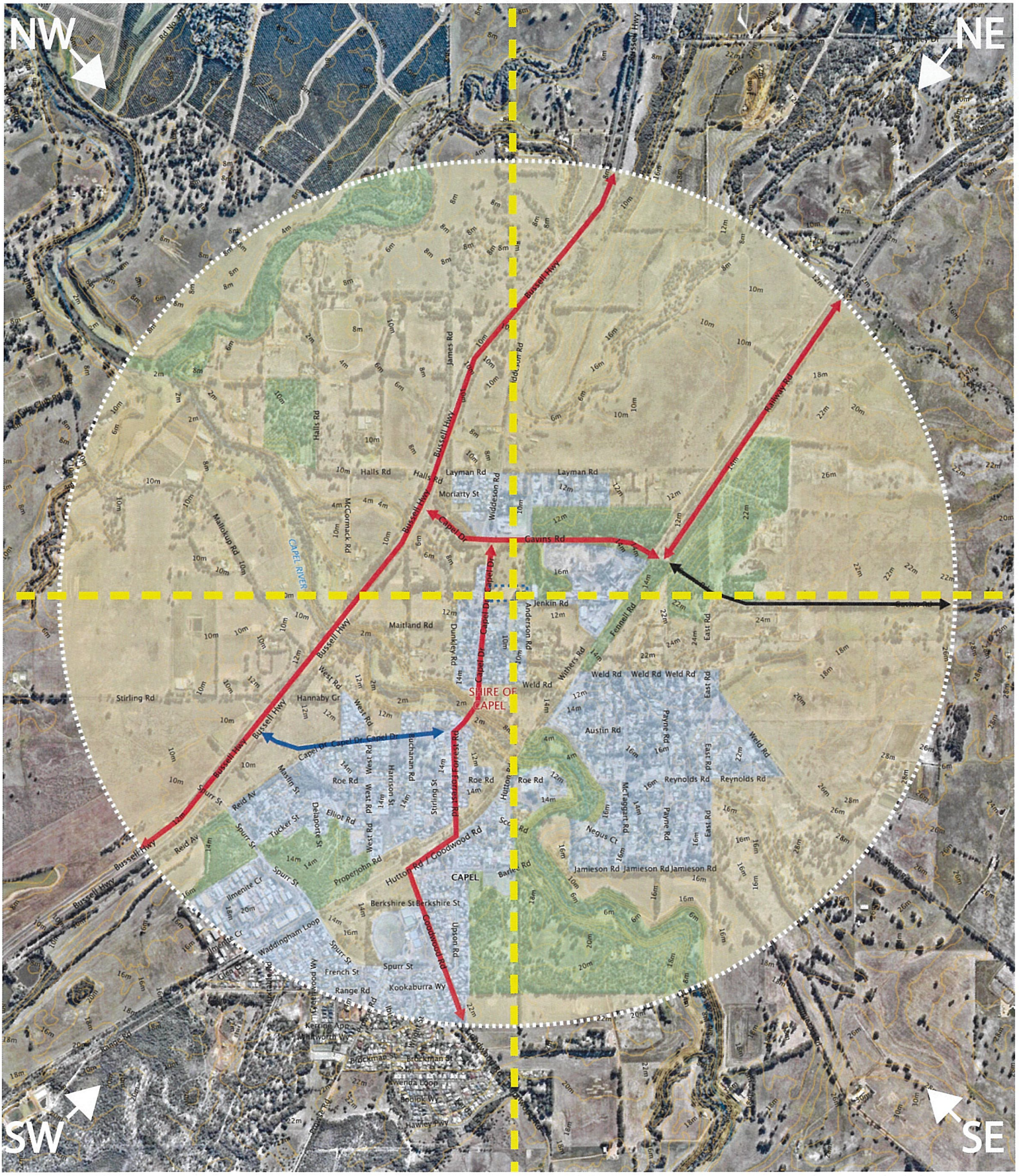
5.1 COMPLIANCE TABLE

The Guidelines outline the bushfire protection criteria which strategic planning proposals, structure plans, subdivision and development proposals are assessed against for compliance. The bushfire protection criteria are performance-based criteria utilised to assess bushfire risk management measures, and they outline four elements relevant subject site as follows:

- Element 1 – Location – Broader Landscape;
- Element 2 – Siting and Design;
- Element 3 – Vehicular Access; and
- Element 4 – Water.

The proposed development has been assessed against Elements 1 to 4 of the Bushfire Protection Criteria 4: Strategic Planning and found to be compliant, refer to Table 5.

FIGURE 7: SIMPLIFIED BROADER LANDSCAPE ASSESSMENT - VEGETATION TYPE
LOT 49 (NO.158) CAPEL DRIVE, CAPEL



LEGEND

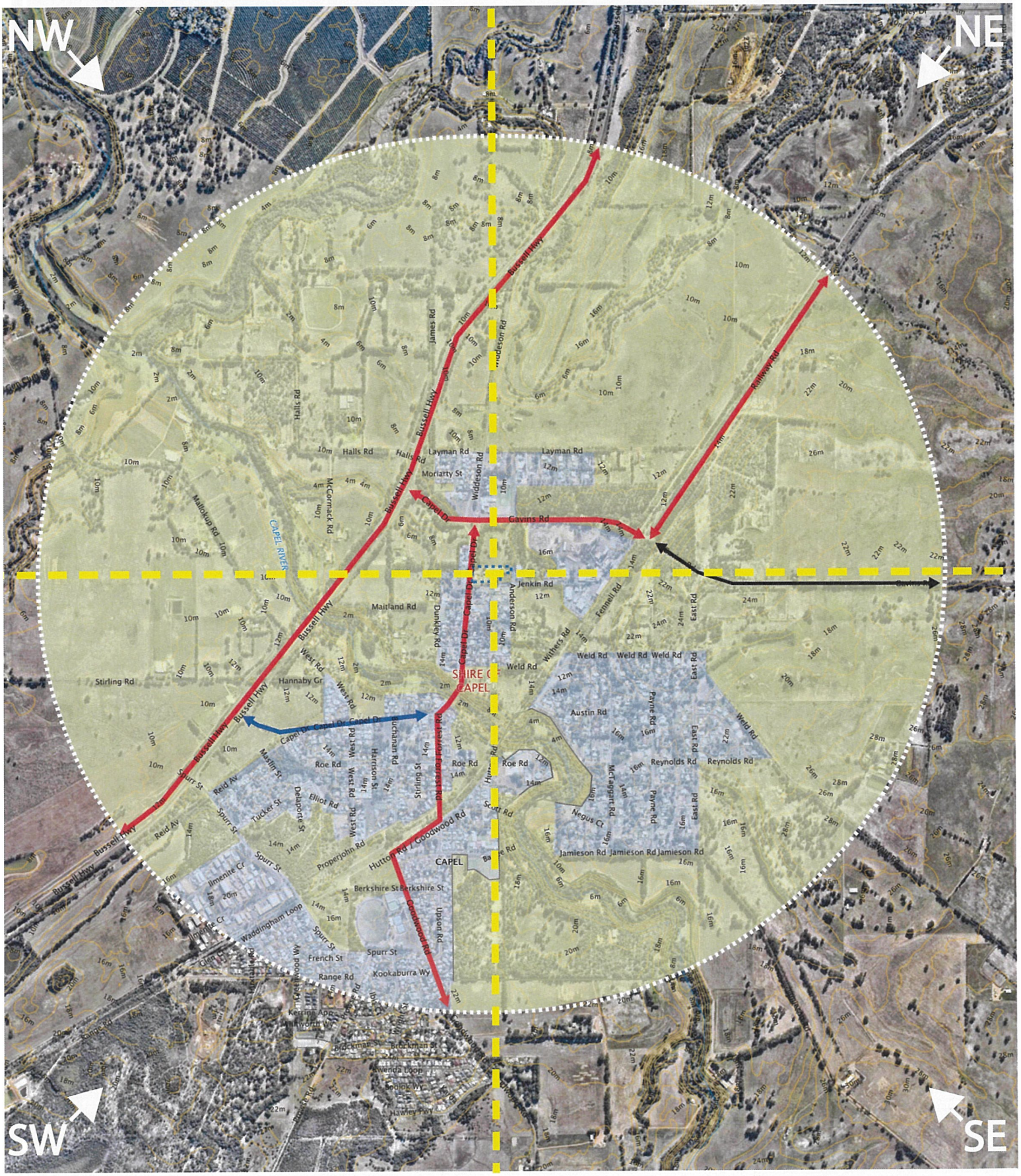
- Subject Site
- 2Km Assessment Area
- All other types of vegetation
- Unmanaged Grassland
- Cleared vegetation (residential or urban zoned land)
- Primary Distributor Road
- Regional Distributor Road
- Local Distributor Road

N

Bushfire Logic

20 June 2025

FIGURE 8: SIMPLIFIED BROADER LANDSCAPE ASSESSMENT - VEGETATION PATTERN
LOT 49 (NO.158) CAPEL DRIVE, CAPEL



LEGEND

- Subject Site
- 2Km Assessment Area
- Large tracts of classified vegetation
- Mosaic Vegetation Pattern (including Grassland)
- Cleared vegetation (residential or urban zoned land)
- Primary Distributor Road
- Regional Distributor Road
- Local Distributor Road

N

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20 June 2025

Table 5: Bushfire Protection Criteria Applicable to Subject Site

ELEMENT	ACCEPTABLE SOLUTION	APPLICABLE OR NOT YES/NO	PROPOSAL MEETS ACCEPTABLE SOLUTION	
Element 1 - Location				
A1.1a Broader Landscape Type A	*The subject site is located in an area that is a Broader Landscape Type A. This location satisfies the policy outcome for* *Element 1: Location and no additional consideration is required.*	Yes	Compliant A Simplified Broader Landscape Assessment has been undertaken in accordance with Appendix A.1.4.1 of the Planning for Bushfire Guidelines. Figure 7: *Broader Landscape Assessment – Type* and Figure 8: *Broader Landscape Assessment – Pattern* have been prepared to assist in demonstrating that the proposed Scheme Amendment complies. The following also details responses to the requirements of A.1.4.1:	
			1. Is the subject site within a kilometre of a townsite, urban area or suitable destination?	Yes The subject site is located immediately adjacent to existing residential zoned lots to the north and south and urban development zoned lots to the west. These lots are zoned Urban under the GBRS.
			2. Is the road pattern from the planning proposal to the closest townsite, urban area or suitable destination, simple and/or direct (limited intersections)?	Yes The road patterns within the surrounding locality are straight and grid pattern connecting directly to the Capel townsite approximately 600 metres to the south. The subject site takes direct access from Capel Drive which is a Primary Distributor road under the Main Roads road hierarchy. Capel Drive connects to the broader public road network north and south and to Bussell Highway to the west which is identified as Primary Regional Road reserve in the planning framework and a Primary Distributor road under the Main Roads road hierarchy.
			3. Is the majority of vegetation cleared, managed or Class G	Yes The 2km wide broader landscape assessment area comprises areas clear of vegetation in accordance with the zoning applicable under the

			Grassland, within the broader landscape assessment area (e.g. clearing for residential zoned urban lots)?	local planning framework and existing rural residential subdivisions and grassland paddocks associated with agricultural and farming land uses. Vegetation along the Capel River Foreshore reserve is characteristic of Class A Forest however this vegetation is separated and does not form part of a continuous and expansive vegetation plot.
			4. Is the planning proposal exposed to two or less aspects with external bushfire hazards (excluding Class G Grassland)?	Yes The subject site is not exposed to external bushfire hazards within the 2km study area. Aspects comprise Class G Grassland or excluded and developed land.
A1.1b Broader Landscape Type B	*The subject site is located in an area that is a Broader Landscape Type B which presents an unacceptable bushfire risk of a landscape-scale bushfire resulting in impacts to people, property and infrastructure.*	No	N/A – Site is within Broader Landscape Type A as demonstrated above.	

Element 2 – Siting and Design Area 2			
A2.1 Siting and design	*The areas of the subject site(s) identified for intensification and/or the future development site(s) achieve a pre- or post-development bushfire hazard level of moderate or low.*	Yes	Compliant Figure 3: *Pre-Development Vegetation Assessment and Photo Points*, Figure 4: *Post Development Vegetation Assessment*, Figure 5: *Bushfire Hazard Level Assessment* and Figure 6: *Bushfire Attack Level Contour Map* demonstrate that the subject site is within an area of moderate bushfire hazard level and will be capable of accommodating future development within an area of BAL-29 or below. Some areas of the lots will be subject to a BAL-40/BAL-FZ rating due to the vegetation adjoining, however this can be managed through building envelopes or building exclusion areas being defined at subdivision stage. Proposal meets Acceptable Solution A2.1.
A2.2 Clearing of native vegetation	*The strategic planning proposal avoids, or where unavoidable, minimises the clearing of native vegetation*	Yes	Compliant The subject site does not contain any native vegetation that will require clearing. Proposal meets Acceptable Solution A2.3.
Element 3 – Vehicular Access Area 2			
A3.1 Public Roads	*Meet technical requirements of Appendix B.3 Table 10.*	Yes	Compliant The subject site is well connected to the existing public road network. All constructed roads are compliant with the IPWEA Subdivision Guidelines and Appendix B.3 Table 10 of the Guidelines. Proposal meets Acceptable Solution A3.1 - Public Roads.
A3.2 Access Routes	*Public road access should be provided in two different directions to two different suitable destinations, with an all-weather surface.*	Yes	Compliant The road patterns within the surrounding locality are straight and grid pattern connecting directly to the Capel townsite approximately 600 metres to the south. The subject site takes direct access from Capel Drive which is a Primary Distributor road under the Main Roads road hierarchy. Capel Drive connects to the broader public road network north and south and to

			Bussell Highway to the west which is identified as Primary Regional Road reserve in the planning framework and a Primary Distributor road under the Main Roads road hierarchy. Proposal meets Acceptable Solution A3.2.
A3.3a No-through roads OR A3.3b No-through road requirements	*Area 2: If the public road access to the subject site is via a no-through road which cannot be avoided due to demonstrated site constraints, the public road access is to be a maximum of 200 metres from the proposed lot(s) boundary to an intersection where two-way access is provided.*	No	N/A The subject land is connected to Capel Drive which is a through road and complies with A3.3a. Not required to be assessed to A3.3a.
Element 4 – Water Supply Area 2			
A4.1 Water supply for structure plans	*Evidence that a reticulated or sufficient and sustainable non-reticulated water supply for bushfire firefighting can be provided at subsequent planning stages.*	Yes	Compliant A reticulated water supply is available to the subject site with hydrants located within the surrounding road networks in accordance with the Water Corporation standard #63. Proposal can meet Acceptable Solution A4.1.

6. RESPONSIBILITIES FOR IMPLEMENTATION AND MANAGEMENT OF BUSHFIRE MEASURES

NUMBER	ACTION	DUE	COMPLETED
1	Design future lots to ensure habitable buildings can be located within an area of BAL-29 or lower.	At subdivision stage	
2	Lots that contain BAL-40 or BAL-FZ will include a building exclusion area on the subdivision plan.	At subdivision stage	
3	Design the reticulated water and fire hydrants in accordance with the Water Corporation's No. 63 Water Reticulation Standards.	At subdivision stage	

7. CERTIFICATION

I hereby certify that I have undertaken the assessment of the above site and determined the Bushfire Attack Level(s) stated in this document have been prepared in accordance with the requirements of AS3959:2018 and the Guidelines for Planning in Bushfire Prone Areas.

SIGNED, ASSESSOR: .... DATE 20 June 2025

Jemma Douglas, Bushfire Logic

Accredited Level 2 Bushfire Practitioner (Accreditation No: 38400)

8. REFERENCES

AS3959-2018 Australian Standard, *Construction of buildings in bushfire-prone areas*, Building Code of Australia, Primary Referenced Standard, Australian Building Codes Board and Standards Australia.

Department of Fire and Emergency Services (DFES, 2023). Accessed at: DFES - Department of Fire and Emergency Services

Government of Western Australia (GoWA) (2015). *Planning and Development (Local Planning Scheme) Regulations 2015.*

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Government of Western Australia (GoWA) (2011). *Building Act 2011*.

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NCC, National Construction Code (n.d.) *Building Code of Australia*. Accessed from: https://ncc.abcb.gov.au/

Office of Bushfire Risk management (OBRM) (2024). Map of Bushfire Prone Areas. Data retrieved from State Land Information Portal (SLIP) https://maps.slip.wa.gov.au/landgate/bushfireprone/

Western Australian Planning Commission (WAPC) (2024). *State Planning Policy 3.7 Bushfire*

Western Australian Planning Commission (WAPC) (2024). *Planning for Bushfire Guidelines* (September 2024) Western Australian Planning Commission and Department of Planning WA, Government of Western Australia.

APPENDIX 1: VEGETATION ASSESSMENT AND CLASSIFICATION

Site Details	
Address:	Lot 49 (No.158) Capel Drive
Suburb:	Capel
Local Government Area:	Shire of Capel
Description of works:	Proposed Scheme Amendment – R2.5 to R5 density change
Main BCA class of the building	N/A

Report Details		
Report Version	**Assessment Date**	**Report Date**
1	17 June 2025	20 June 2025

Vegetation Classification

All vegetation within 150m of the site / proposed development was classified in accordance with Clause 2.2.3 of AS 3959-2018. Each distinguishable vegetation plot with the potential to determine the Bushfire Attack Level is identified below.

Vegetation Plot 1				
Classification	Class G Grassland			
Exclusion Clause (if applicable)	N/A			
Effective Slope	Measured	Upslope	Applied Range (Method 1)	Upslope or flat 0 degrees
Description/Justification:	This plot contains grassland within the subject lot, including situations with shrubs and trees. Overstorey foliage is less than 10%.			
Post Development Assumptions:	Vegetation within this plot will be removed as part of the implementation of the subsequent subdivision of the land.			

Photo ID: **P1**

Photo ID: **P2**

Photo ID: **P3**

Photo ID: **P4**

Photo ID: **P5**

Photo ID: **P6**

Photo ID: **P7**

Photo ID: **P8**

Vegetation Plot 2				
Classification	Class G Grassland			
Exclusion Clause (if applicable)	N/A			
Effective Slope	Measured	D/Slope 3 degrees	Applied Range (Method 1)	D/Slope >0-5 degrees
Description/Justification:	This plot is characterised as grassland, including situations with shrubs and trees. Overstorey foliage is less than 10%. This plot includes an existing tributary connecting to the Collie River.			
Post Development Assumptions:	Nil.			

Photo ID: **P9**

Photo ID: **P10**

Photo ID: **P11**

Vegetation Plot 3				
Classification	Class B Woodland			
Exclusion Clause (if applicable)	N/A			
Effective Slope	Measured	Upslope	Applied Range (Method 1)	Upslope or flat 0 degrees
Description/Justification:	This plot is characterised by eucalypts approximately 4-10 metres high with a clear grassy understory.			
Post Development Assumptions:	N/A			

Photo ID: **P12**

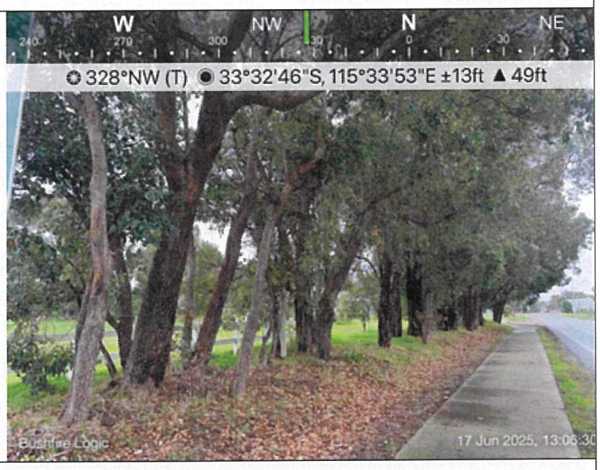

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Photo ID: **P14**

Photo ID: **P15**

Vegetation Plot 4				
Classification	Class A Forest			
Exclusion Clause (if applicable)	N/A			
Effective Slope	Measured	Flat	Applied Range (Method 1)	All upslopes and flat land (0 degrees)
Description/Justification:	This plot is characterised by eucalypt tree species and wattles with a clear tiered structure of surface and near surface fuels including fallen branches, grasses and shrubs.			
Post Development Assumptions:	Nil.			

Photo ID: **P16**

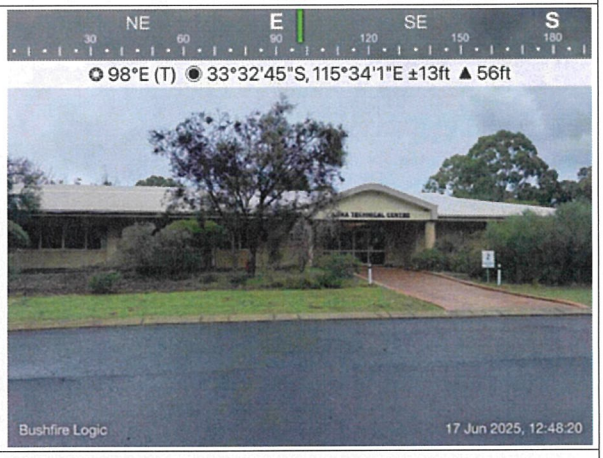
Photo ID: **P17**

Photo ID: **P18**

Photo ID: **P19**

Vegetation Plot 5				
Classification	N/A			
Exclusion Clause (if applicable)	2.2.3.2 (e) Low threat vegetation – Non-vegetated area 2.2.3.2 (f) Low threat vegetation – minimal fuel condition			
Effective Slope	Measured	N/A	Applied Range (Method 1)	N/A
Description/Justification:	This plot contains private cultivated gardens associated with existing dwellings maintained in a low-threat state in perpetuity. This plot also contains areas cleared of vegetation including car parking areas, public road networks, existing dwellings and driveways.			
Post Development Assumptions:	Nil.			

Photo ID: **P20**



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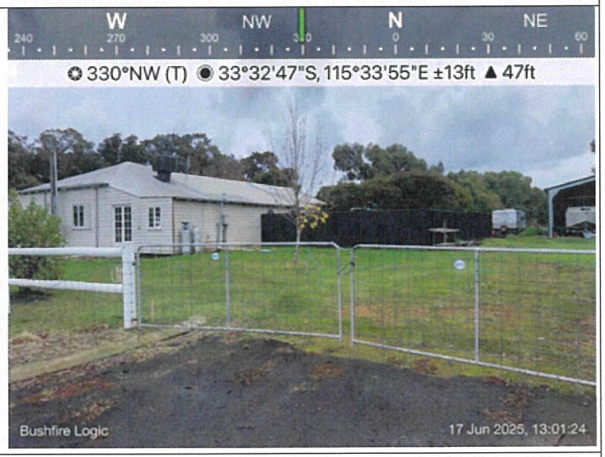

Photo ID: **P23**

	
Photo ID: **P24**	Photo ID: **P25**

LEGEND

PROPOSAL DETAILS	
Subject Land	
Area of Subject Land	1.0502ha
No of Existing Lots	1
No of Proposed Lots	4
Minimum Lot Size	2000m²
Average Lot Size	2626m²
Proposed Lot Boundaries	
LAND DETAILS	
Local Government Area	Shire of Capel
Zoning	Residential R2.5
Existing Boundaries	
Existing Structures	
SERVICING INFORMATION (BYDA)	
Overhead Electricity	AE
Reticulated Water	W
Reticulated Sewer	Not Available
Telecommunications	T
Reticulated Gas	Not Available

Note: All Existing Structures to be Retained

CONCEPT PLAN

Lot 49 on (No. 158) Capel Drive, CAPEL

Plan No.	24544-01
Date	19/05/25
Drawn	TJ
Checked	AR
Revision	A
Scale	1:750@A3

0 10m 20m

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

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

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Appendix C **Site and Soil Evaluation**

accendo AUSTRALIA

SITE AND SOIL EVALUATION

LOT 49 (HSE 158) CAPEL DRIVE, CAPEL

June 2025

Telephone +61 418 950 852

info@accendoaustralia.com.au
PO Box 5178 West Busselton WA 6280
ABN 11 160 028 642

www.accendoaustralia.com.au

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Limitations

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This report is strictly limited to the matters stated in it and is not to be read as extending, by implication, to any other matter in connection with the matters addressed in it.

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The conclusions and recommendations in this report are based on assumptions made by Accendo described in this report where and as they are required. Accendo disclaims liability arising from any of the assumptions being incorrect.

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EXECUTIVE SUMMARY

Harley Dykstra on behalf of the landowner Mick Jackson, is seeking to subdivide Lot 49 (HSE 158) Capel Drive, Capel into four lots. One lot will contain the existing dwelling and infrastructure and three new lots (herein referred to as the subject site), will be developed with individual dwellings. A Site and Soil Evaluation (SSE) is required to support the subdivision.

The subject site is located within the municipality of the Shire of Capel, approximately 800 m to the north of the Capel town centre and approximately 180 km south of Perth.

This SSE report has been prepared to support the proposed subdivision of the subject site. It investigates the existing environment and the suitability of the subject site for onsite effluent disposal and the appropriate location for onsite effluent disposal in accordance with the relevant regulations and guidelines.

The use of onsite effluent disposal within the subject site is considered suitable provided a combination of the following measures are implemented:

- The use of conventional onsite effluent disposal systems such as septic tanks and leach drains is considered suitable for the subject site if situated with sufficient separation to groundwater;
- Apply secondary treatment with nutrient retention abilities to minimise the risk of nutrient leaching to groundwater where irrigation systems are used or 1.5 m of separation to groundwater cannot be achieved;
- Plant vegetation requiring high nutrients to encourage evapotranspiration;
- Import soil to raise ground levels and increase soil volume surrounding disposal systems, if required; and
- Increase the size of the disposal system to distribute effluent and therefore nutrients over a large application area, if possible.

Based on this assessment and compliance with the above management measures, Accendo considers that the subject site is suitable for onsite effluent disposal.

CONTENTS

Tables

Figures

1 INTRODUCTION

1.1 Background

Harley Dykstra, on behalf of the land owner, Mick Jackson, is seeking to subdivide Lot 49 (HSE 158) Capel Drive, Capel into four lots. One lot will contain the existing dwelling and infrastructure and three new lots (herein referred to as the subject site) will be developed with individual dwellings. A Site and Soil Evaluation (SSE) is required to support the subdivision. The subject site is located within the municipality of the Shire of Capel, located approximately 800 m to the north of the Capel town centre and approximately 180 km south of Perth (refer to **Figure 1** and **Figure 2**).

Pursuant to the Shire of Capel's *Local Planning Scheme No. 8* (LPS 8), the subject site is zoned 'Residential' and 'Urban' under the Greater Bunbury Regional Scheme (GBRS). The subject site is bordered to the north and south by properties also zoned 'Residential' under the LPS8 and 'Urban' under the GBRS. Properties to the east are zoned 'General Industry' under the LPS8 and 'Industrial' under the GBRS while properties to the west are zoned 'Urban development' under the LPS8 and 'Urban' under the GBRS.

1.2 Purpose

In consideration of the above, to support the subdivision and development of the subject site, the purpose of this report is to determine the suitability of the subject site for onsite effluent disposal and the appropriate on-site effluent system to comply with the following policies and standards:

- *Government Sewerage Policy* (September 2019) (Department of Planning, Lands and Heritage); and
- *Australian/New Zealand Standard On-site domestic wastewater management* (AS/NZS 1547:2012) (February 2012).

1.3 Description of Development

The proposed development involves the subdivision of the subject site only. No infrastructure is planned at this stage.

1.4 Existing Infrastructure

The subject site is currently unoccupied and is largely cleared containing pasture grasses. Proposed lot A contains an existing dwelling and shed which will be retained as a part of the subdivision. The proposed subdivision allows for the creation of three new lots within the subject site. The Australian Standard (AS/NZS 1547:2012) provides guidance on the calculation of expected wastewater design flows for domestic households, established on the basis of peak occupancy and water supply (as outlined in Table H1 in AS/NZS 1547:2012), and is summarised in **Table 1**.

Table 1. Typical Domestic Wastewater Design Flow Allowances – Australia.

Source	Typical wastewater design flows (L/person/day)	
Residential premises	On-site roof water tank supply	Reticulated water supply
	120	150
Source: Australian Bureau of Statistics. Water Account 2004/2005. Chapter 7 Figure 7.3		

Based on the assumption of the construction of a single dwelling per lot with a maximum occupancy of six persons and the presence of reticulated water to the subject site, the total wastewater produced over the three lots per day would be approximately 2,700 L. Given that the wastewater for each lot is to be processed within the lot, the on-site effluent systems must be capable of processing 900 L per day.

2 BIOPHYSICAL ENVIRONMENT

2.1 Topography, Landforms and Soils

The subject site is flat with a topographical elevation of approximately 12 metres (m) Australian Height Datum (AHD).

The subject site is located within the Bassendean systems of the Bassendean Zone, consisting of sand dunes and sandplains with pale deep sand, semi-wet and wet soil.

The Department of Primary Industry and Regional Development's (DPIRD's) Natural Resource Information Portal (NRInfo) maps the subject site as occurring within the Bassendean B1 phase consisting of extremely low to very low relief dunes, undulating sandplain and discrete sand rises with deep bleached grey sands sometimes with a pale yellow B horizon or a weak iron-organic hardpan at depths generally greater than 2 m.

A site investigation was undertaken on the 10th May 2025 where three test holes were excavated to depths ranging from approximately 0.75 m to 1.15 m below ground level (BGL) and samples were collected for laboratory analysis. Permeability testing was undertaken in proximity to test hole (TH)1 and TH3 (refer to **Figure 2**).

The soils within the subject site were fine brown to yellow sand with increasing clay at depth. Refusal of the hand auger occurred due to a clay layer at 0.9 m BGL, 0.75 m BGL and 1.15m BGL at TH1, TH2 and TH3 respectively.

2.2 Surface Water

The subject site is located within the Capel River West subarea of the Capel River System *Rights in Water and Irrigation Act 1914* (RiWI Act) proclaimed surface water management area. A tributary of the Capel River is located approximately 95 m to the southwest of the subject site.

The 1 in 100 year Annual Exceedance Probability (AEP) floodplain level as mapped by the Department of Water and Environmental Regulation (DWER) indicates that the subject site is not mapped within an area at risk.

Wetlands within Western Australia are classified on the basis of landform and water permanence pursuant to the Semeniuk (1995) classification system (refer to **Table 2**).

Table 2. Wetland classifications (Semeniuk 1995).

Water Longevity	Landform				
	Basin	Channel	Flat	Slope	Highland
Permanent Inundation	Lake	River	-	-	-
Seasonal Inundation	Sumpland	Creek	Floodplain	-	-
Intermittent Inundation	Playa	Wadi	Barlkarra	-	-
Seasonal Waterlogging	Dampland	Trough	Palusplain	Paluslope	Palusmont

Areas of wetlands in Western Australia have been mapped and this mapping has been converted into a digital dataset that is maintained by the Department of Biodiversity, Conservation and Attractions (DBCA) and is referred to as the *'Geomorphic Wetlands of the Swan Coastal Plain'* dataset. This dataset contains information on geomorphic wetland types and assigns management categories that guide the

recommended management approach for each wetland area. The wetland management categories and management objectives are listed in **Table 3**.

Table 3. DBCA wetland management categories (Semeniuk 1995).

Category	Description	Management Objectives
Conservation	Wetlands support a high level of ecological attributes and functions.	Highest priority wetlands. Objective is to preserve and protect the existing conservation values of the wetlands through various mechanisms including: • Reservation in national parks, crown reserves and State owned land, • Protection under Environmental Protection Policies, and • Wetland covenanting by landowners. No development or clearing is considered appropriate. These are the most valuable wetlands and any activity that may lead to further loss or degradation is inappropriate.
Resource Enhancement	Wetlands which may have been partially modified but still support substantial ecological attributes and functions	Priority wetlands. Ultimate objective is to manage, restore and protect towards improving their conservation value. These wetlands have the potential to be restored to Conservation category. This can be achieved by restoring wetland function, structure and biodiversity.
Multiple Use	Wetlands with few remaining attributes and functions	Use, development and management should be considered in the context of ecologically sustainable development and best management practice catchment planning through landcare.

A portion of the subject site is located within a Multiple Use (MU) wetland (UFI 15,809) (refer to **Figure 3**). MU wetlands are assessed as possessing few remaining ecological attributes and functions, which is characteristic of these mapped areas within the property. While such wetlands can still contribute to regional or landscape ecosystem management, including hydrological function, they are considered to have low intrinsic ecological value. Typically, they have minimal or no native vegetation remaining (less than 10%). Accordingly, there is no legislative requirement to protect or retain them and as such MU wetlands do not preclude development.

In accordance with the GSP (2019), significant wetlands include Ramsar wetlands, those listed in the Australian Government's *Directory of Important Wetlands in Australia*, wetlands classified as Conservation Category in the DBCAs' *'Geomorphic Wetlands of the Swan Coastal Plain'* dataset, wetlands listed in the *South Coast Significant Wetlands* database, and any other wetlands identified for protection through the land use planning process. As MU wetlands do not fall under any of these classifications, they are not considered significant wetlands and therefore do not restrict development.

The management objective for MU wetlands is to preserve the hydrological functions in the context of the proposed development (EPA 2008). The current water cycle within the subject site consists of inputs from flowing through the drainage lines into the wider drainage system. The development is not proposing to alter this process.

2.3 Groundwater

The subject site is located within the Busselton –Capel subarea of the RiWI Act proclaimed Busselton – Capel Groundwater Area. No groundwater was encountered within either test hole during site investigations in May.

However, a nearby site investigation conducted by Accendo in August 2023 at 159 Capel Drive, Capel indicated that maximum groundwater levels are assumed to be approximately 8.5 m AHD.

To protect the State's drinking water resources the DWER has defined certain Priority Classification Areas within the Public Drinking Water Source Areas (PDWSA) providing three levels of groundwater quality protection. These are based on the principles of risk avoidance (Priority 1), risk minimisation (Priority 2) and pollution limiting (Priority 3). The subject site is not mapped as occurring within a PDWSA with the closest PDWSA, the Capel Water Reserve, located approximately 620 m to the south of the subject site.

2.4 Sewage Sensitive Areas

The *Government Sewerage Policy* (GSP) (DPLH 2019) was produced to establish the Western Australian Government's position on the provision of sewerage services in the State. It requires reticulated sewerage to be provided during the subdivision and development of land where possible. Reticulated sewerage is not available within the subject site, therefore sewerage disposal is to adopt a best practice approach in accordance with *Australian/New Zealand Standard 1547 On-site domestic wastewater management* and the GSP.

The general site requirements for on-site effluent disposal are outlined in the GSP and *AS/NZS 1547:2012* and are dependent on whether the site is located within a sewage sensitive area. The subject site is not mapped within a sewage sensitive area (as defined within the GSP).

2.5 Climate

The climate at the subject site can be described as Mediterranean with warm and dry summers and cold and wet winters. According to data from the closest weather station, Capel North (Station number 9992, accessed at www.bom.gov.au), the annual average rainfall is approximately 665.1 mm, with the highest monthly rainfall of 133.3 mm recorded in July and the lowest, 8.9 mm, recorded in February. According to data from the closest weather station with available temperature data, Busselton Aero (Station number 9603, accessed at www.bom.gov.au), the average monthly maximum temperatures range from 30.4 °C in January to 16.9 °C in July and the average monthly minimum temperatures range from 14.8°C in February to 7.0°C in July. The average monthly Class A pan evaporation for Donnybrook, the closest available data ranges between 221 mm in January to 47 mm in June. Evaporation is greater than rainfall from October to April. The annual average Class A pan evaporation is 1,399 mm, which is greater than the average rainfall.

3 SITE ASSESSMENT

3.1 Site Specific Investigations

In order to provide a measure of the site-specific characteristics to determine the suitability of onsite effluent disposal, a site investigation was undertaken on the 10th May 2025 involving the excavation of three test holes to a depth ranging from of 0.75 m BGL to 1.15 m BGL. The site investigation also involved onsite permeability testing and the collection of soil samples for phosphorus retention index (PRI) testing (refer to **Figure 2**).

3.1.1 Groundwater Levels

As discussed within **Section 2.3**, groundwater monitoring within the subject site has not been undertaken, however groundwater was not encountered in any test hole during the site investigations. A site investigation conducted by Accendo in August 2023 within Lot 48 Capel Drive indicated peak groundwater levels were approximately 8.5 m AHD. Topographical elevations within the subject site of approximately 12 m AHD would indicate a separation to groundwater of approximately 3.5 m.

3.1.2 Subsurface Findings

As discussed within **Section 2.1**, the soils within the subject site were fine brown to orange sand to sandy loam over clay loam. Refusal of the hand auger occurred at 0.9 m BGL, 0.75 m BGL and 1.15 m BGL for TH1, TH2 and TH3, respectively.

3.1.3 Soil Texture

A sample was taken from each test hole and was moistened, prior to a ribbon test being performed. The samples at TH1 and TH2 displayed minimal cohesion and did not produce a ribbon (refer to **Plate 1**). The sample from TH3 could be moulded into a ball when wet and showed moderate cohesion but formed a minimal ribbon (refer to **Plate 2**). The samples were gritty to feel and single grains stuck to fingers. According to information presented in the table below (*AS/NZS 1547:2012*), the soil type, can be estimated to be 'Sandy loam'.

Table 4. Assessment of Soil Textures.

Soil Category	Classification	Properties	Typical clay content %
1	Sand	Very little to no coherence, cannot be moulded; single grains stick to fingers	<5
2	Loamy Sand	Slight coherence; forms a fragile cast that just bears handing; gives a very short (5 mm) ribbon that breaks easily, discolours fingers.	5-10
	Sandy Loam	Forms a cast but will not roll into a coherent ball; individual sand grains can be seen and felt; gives a ribbon 15 – 25 mm long	10-20
3	Fine sandy loam	As for sandy loams, except that individual sand grains are not visible, although they can be heard and felt; gives a ribbon 15-25 mm long	10-20
	Loam	As for sandy loams but cast feels spongy, with no obvious sandiness or silkiness, may feel greasy if much organic matter is present; forms a thick ribbon about 25 mm long.	10-25

Soil Category	Classification	Properties	Typical clay content %
	Silty loam	As for loams but not spongy; very smooth and silky; will form a very thin ribbon 25 mm long and dries out rapidly.	10-25
4	Sandy clay loam	Can be rolled into a ball in which sand grains can be felt; forms a ribbon 25 -40 mm long.	20-30
	Fine sandy clay	As for sandy clay loam, except that individual sand grains loam are not visible although they can be heard and felt; forms a ribbon 40-50 mm long.	20-30
	Clay loam	Can be rolled into a ball with a rather spongy feel; slightly plastic; smooth to manipulate; will form a ribbon 40-50 mm long.	25-35
	Silty clay loam	As for clay loams but not spongy; very smooth and silky; will form a ribbon about 40-50mm long; dries out rapidly.	25-35
5	Sandy clay	Forms a plastic ball in which sand grains can be seen, felt or heard; forms a ribbon 50 -75 mm long.	35-45
	Light clay	Smooth plastic ball that can be rolled into a rod; slight resistance to shearing between thumb and forefinger; forms a ribbon 50 – 75 mm long.	35-40
	Silty clay	As for light clay but very smooth and silky; will form a ribbon about 50 – 75 mm long but very fragmentary; dries out rapidly.	40-50
6	Medium clay	Smooth plastic ball, handles like plasticine and can be moulded into rods without fracture; some resistance to ribboning, forms a ribbon 75 mm or more long.	40-55
	Heavy clay	Smooth plastic ball that handles like stiff plasticine; can be moulded into rods without fracture; firm resistance to ribboning; forms a ribbon 75. Mm or more in length.	

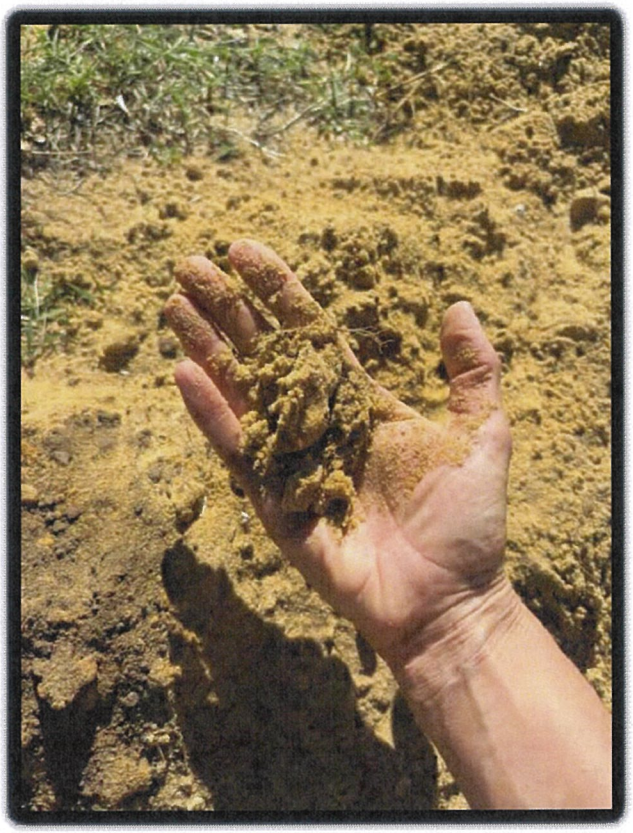

Plate 1: Soil at TH1, showing yellow sand, minimal cohesion with single grains sticking to fingers.

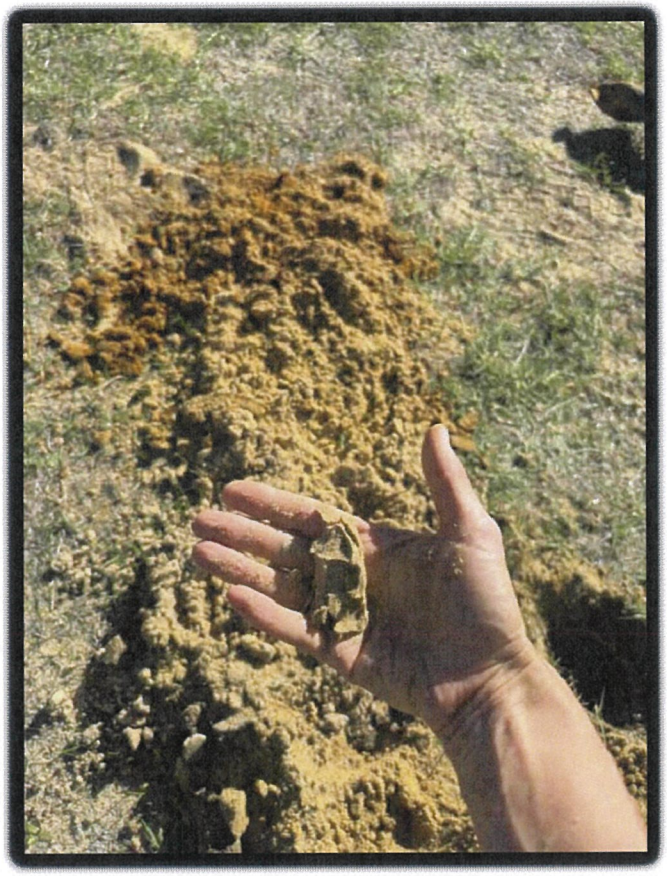

Plate 2: Soil at TH3 showing moderate cohesion with grains sticking to hands.

3.1.4 Permeability

Permeability is the characteristic of the soil which governs the rate at which water will move through it and depends largely on soil texture, soil structure, the presence of clay pans and the size and distribution of pores in the soil. Soils that are too permeable, such as white sands, or clays that are impermeable, are at risk. Qualitative categories of permeability and approximate limits for each category in terms of hydraulic conductivity are listed in **Table 5** (Wells 1989).

Table 5. Permeability classes (Wells 1989).

Permeability	Saturated hydraulic conductivity
Slow	<0.01 m per day
Moderately slow	0.01-0.05 m per day
Moderate	0.05-0.5 m per day
Moderately rapid	0.5-1 m per day
Rapid	1-5 m per day
Very rapid	> 5 m per day

Soil permeability testing was undertaken using the Talsma-Hallam constant head method in accordance with best practice as described in AS/NZS 1547:2012. Soil permeability testing was undertaken adjacent to TH1 and TH3 during the site investigation and indicated the soils were of 'Very Rapid' and 'Rapid' permeability with a saturated hydraulic conductivity of 5.38 m/day and 3.78 m/day, respectively.

3.1.5 Microbial Purification Risk

Microbial purification relates to the ability of the soil (used for onsite effluent disposal) to remove micro-organisms that may be detrimental to public health. It is essentially a measure of the permeability of, and aeration within, the soil profile. This influences its ability to:

- Remove undesirable micro-organisms from onsite effluent; and
- Provide suitable conditions for the oxidation of some organic and inorganic compounds added to the soil as effluent.

Microbial purification ability is influenced by the time of travel through the soil profile, which is directly related to the size and distribution of the pore spaces and the depth to the water table or an impermeable layer. Important soil characteristics include PRI, depth, particle size and the clay and/or organic matter content. Sites which have poor drainage tend to have low microbial purification ability.

PRI quantifies the ability of a soil to bind and retain phosphate and therefore the capacity for the purification of nutrients. Soils with an increased PRI have an elevated capacity to retain phosphate and remove nutrients. In sandy soils the PRI is usually less than 5. Very strongly absorbing soils include lateritic loams, iron-rich peats and Karri loams with PRI > 70. The *Code of Practice for the Design, Manufacture, Installation and Operation of Aerobic Treatment Units* (DoH 2015) indicates a PRI of greater than 20 should be observed for the installation of an ATU system. Soil samples were collected from all three test hole locations during site investigations and analysed for PRI (refer to **Table 6** and **Appendix B**). These results demonstrate that the PRI of the soils within the subject site have a very low to low capacity to bind and retain nutrients.

Table 6. PRI rating for test holes within the subject site.

Test Hole ID	Phosphorus Retention Index
Test hole 1	2.0
Test hole 2	6.6
Test hole 3	5.4

Depth to the water table is a key consideration regarding microbial purification as it affects the effluent travel time available for removal of microbes and for organic matter to be oxidised prior to reaching the water table. The accepted standard depth of soil required for adequate microbe removal is 1.2 m (Wagner and Lanoix 1958).

In consideration of the anticipated groundwater levels, very low to low PRI results and rapid to very rapid permeability results, the soils within the subject site are considered to have a low microbial purification capability.

3.1.6 Rock Outcrops

Rock outcrops were not observed throughout the subject site.

3.1.7 Vegetation

The majority of the subject site is cleared of vegetation consisting of paddock grasses and isolated trees. Trees are located along the southern and eastern boundary of the subject site.

3.1.8 Slope

High slopes make construction of soil adsorption systems difficult. Given the topography of the subject site at the locations of the effluent disposal areas, the subject site is classified as having a slope of less than 10%.

3.1.9 Soil Categorisation

Soil categorisation is undertaken within the AS/NZ Standard 1547-2012 considering several important soil properties such as:

- Soil texture;
- Sodicity and dispersiveness;
- Soil structure;
- Presence, density and sizes of biological pores – 'areal porosity';
- Soil bulk density; and
- Soil permeability.

In accordance with Table 5.1 of AS1547:2012, the soils located within the subject site can be categorised as soil category 2 'Sandy loam'.

3.2 Summary

A summary of the findings from the desktop and site investigation are provided below in **Table 7**.

Table 7. Key site characteristics.

Site Characteristics	Investigation results	Level of constraint	Mitigation measures
Climate	The mean annual rainfall is 665.1 mm and the Class A Pan evaporation is 1,399 mm. Evaporation is greater than rainfall in seven months of the year.	Low	None required
Exposure	The subject site is largely devoid of vegetation. The subject site has moderate exposure to sun and wind.	Low	None required
Vegetation	The subject site contains paddock grasses with isolated trees and trees along the southern and eastern borders.	Low	None required
Landform and slope	The subject site is flat (less than 10%).	Low	None required
Fill	No evidence of fill was observed during the site visit.	Low	None required
Surface gravel and rock outcrops	No rock outcrops were identified in the subject site.	Low	None required
Erosion Potential	No signs of erosion were identified anywhere within the subject site.	Low	None required
Separation to groundwater	No site-specific groundwater data was available at the time of the investigation, however data from a nearby site indicates a separation of approximately 3.5 m may be achievable.	Low	None required.
Public Drinking Water Source Areas (PDWSA)	The subject site is not classified as occurring within a PDWSA.	Low	None required
Sewage Sensitive Areas (SSA)	The subject site is not currently mapped as an SSA.	Low	None required
Surface Water	A watercourse, a tributary of the Capel River, is located to the south west of the subject site.	Low	All LAAs will be located 100m from the tributary.
Flood potential	According to available mapping, the subject site is not located in an area prone to flooding.	Low	None required.

Based on the desktop and site-specific investigations, the constraints identified for the use of on-site effluent disposal within the subject site are largely restricted to the absence of site-specific groundwater data. The presence of clay layers may also impact the installation of systems and affect the flow of effluent through the soil. These constraints can be suitably managed with the implementation of management measures as discussed in the following sections.

4 MANAGEMENT MEASURES

4.1 General Site Requirements

The general site requirements for on-site effluent disposal in lots greater than 2,000 m^2 are outlined in the GSP (DPLH 2019) and AS/NZS 1547:2014 and are summarised in **Table 8** below. An assessment of these criteria against the proposed development with proposed management measures indicates general compliance for onsite effluent disposal within the subject site.

Table 8. Site requirements for on-site effluent disposal and compliance assessment.

Feature	Minimum Requirement	Compliance

Separation from water resources	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 drink 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.
	• 100 metres of a drainage system that discharges directly into a waterway or significant wetland without treatment;
	• Any area subject to inundation and/or flooding in a 10 per cent Annual Exceedance Probability (AEP) rainfall event.
		There are no wellhead or reservoir protection zones, or groundwater bores located within 100 m of the subject site boundaries. Therefore, land application areas within the subject site will comply with these requirements.
		The subject site is not located in an area subject to flooding in a 1 per cent Annual Exceedance Probability (AEP) rainfall event.
		A tributary is located approximately 95m to the south west of the subject site. All LAAs will be 100 m from the tributary.

Separation from groundwater	The discharge point of the on-site sewage system should be at least 1.5 metres above the highest groundwater level for sands without secondary treatment and 0.6 m above the highest groundwater level with secondary treatment in sites located outside of a public drinking water source area and sewage sensitive areas.	Groundwater was not encountered in any test holes during the site investigation conducted in May. However, a nearby site investigation conducted by Accendo in 2023 indicates a separation to groundwater of approximately 3.5 m may be achievable.
Land Application Area (LAA)	Each lot should be of sufficient size to accommodate development and an unencumbered land application area for the disposal of sewage.	The subject site is sufficient to accommodate the required LAAs as shown in **Figure 2**.

Feature	Minimum Requirement	Compliance
	The LAA includes the area restricted to the distribution of treated sewage only and should be kept free of any temporary or permanent structure, should not be built on or paved in a manner which precludes access, not be subject to vehicular or regular foot traffic and should be kept in a manner which enables servicing and maintenance of the disposal system.	
Slope and instability	Where slope exceeds one in five the land application area should be engineered to prevent run-off from the land application area.	The slope of the subject site does not exceed one in five, therefore compliance with this requirement is achieved.

Setbacks	Each lot should be of sufficient size to accommodate the following setbacks
	• Treatment tanks to buildings property boundaries, driveways, paths and other tanks – 1.2 m
	• Trenches, beds and soak wells to boundary, building, tanks and other land application systems – 1.8 m
	• Trenches, beds and soak wells to trafficable areas – 1.2 m
	• Spray irrigation:
	  ○ Boundaries, buildings, treatment tanks, driveways etc – 1.8 m
	  ○ Sub-soil and open drain – 6 m
	  ○ Swimming pool -3 m
	  ○ Treatment tanks – 1.2 m
	• Subsurface Dripper:
	  ○ Boundaries, buildings, treatment tanks, driveways etc – 0.5 m
	  ○ Sub-soil and open drain – 3 m
	  ○ Swimming pool -2 m
	  ○ Garden bore – 10 m
		The LAAs will be of sufficient size with suitable setbacks to ensure compliance with these requirements.

4.2 Treatment Type

The conventional system for onsite disposal and treatment of domestic liquid waste consists of one or more septic tank units connected to a soil absorption system such as a leach drain. Septic tank units are typically connected to two leach drains to enable the release of effluent.

The results of the SSE indicate rapid to very rapid permeability soils with very low to low PRI values, and a separation to groundwater of approximately 3.5 m. On this basis, the use of conventional onsite effluent disposal systems can be considered suitable for the subject site provided adequate separation to groundwater can be achieved.

Based on a capacity of 900 L per day, the total septic tank volume required (as specified within the to the DoH *Onsite wastewater system assessment tool*) would be 3,440 L. This could be provided within a single baffled tank system or a dual tank system with a primary tank volume of 2,293 L and secondary tank volume of 1,147 L

4.3 Land Application System

Tables K1 and K2 in AS/NZS 1547:2012 provide guidance on the selection and design of land application systems with respect to site, soil and climatic factors. Given the limitations of the subject site as outlined in **Section 3.2,** a combination of the following management measures are recommended, depending on the system selected:

- Apply secondary treatment with nutrient retention abilities to minimise the risk of nutrient leaching to groundwater where irrigation systems are used or 1.5 m of separation to groundwater cannot be achieved;
- Plant vegetation requiring high nutrients to encourage evapotranspiration;
- Import soil to raise ground levels and increase soil volume surrounding disposal systems, if required; and
- Increase the size of the disposal system to distribute effluent and therefore nutrients over a large application area, if possible.

Land application systems suitable for category 2 soils with rapid to very rapid permeability and low microbial purification abilities include all subsurface systems where adequate separation to groundwater can be achieved.

If an irrigation system is to be used, extensive dripper line systems as well as surface soil preparation would be required. Secondary treatment capable of supplying effluent with nitrogen less than 10 mg/L and phosphorus of less than 1 mg/L is required for all effluent to be disposed via this method. A maximum design irrigation rate (DIR) of 5 mm/day, is recommended (refer to Table M1 AS/NZS 1547:2012). If subsurface irrigation is to be used, the irrigation system shall also be installed at a depth of approximately 100-150 mm in good quality topsoil, and within grassed or other suitably vegetated areas to slow the soakage and assist with nutrient reduction.

When secondary treatment with nutrient retention is implemented a land application area of 180 m^2 (excluding setbacks) is required.

If sufficient soil depth is present and traditional leach drains are to be used, a maximum DLR of 50 mm/day is recommended for secondary treated effluent and 30 mm/day for primary treated effluent. Separation to groundwater from the base of the drains for secondary treated effluent of at least 0.6 m for secondary treated and 1.5 m for primary treated effluent for sands should be maintained. Table 3 *Determination of land application area (m2)* from the GSP (2019), provides land application areas for a single house with an occupancy of 6 persons in a 5 bedroom house for each soil category. For category 2 soils, utilising secondary treatment a land application area of 180 m^2 (excluding setbacks) is recommended and utilising primary treatment a land application area of 339 m^2 (including setbacks). Assuming an infiltrative area (m^2/m) of approximately 1.74, a total of 15.9 m of leach drain would be required for primary treatment. The recommended layout, as specified within the to the DoH *Onsite wastewater system assessment tool* for leach drains in sandy soils would be two 7.9 m leach drains.

Mounds are normally used on relatively flat slopes, up to 15%, that have site or soil restrictions such as low separation to groundwater. Mounds are constructed directly onto the natural ground surface, which is ploughed, and may be treated with gypsum prior to construction. A maximum design irrigation rate (DIR)

of 24 mm/day is recommended (refer to Table N1 AS/NZS 1547:2012) for category 2 soils. The minimum distribution bed area required for each dwelling would be approximately 77 m^2 with a mound height of approximately 2 m, based on calculations outlined within **Plate 3**. Total dimensions of the mound system is subject to final design which should be undertaken by a qualified plumber or installer. Calculations for the total dimensions should be undertaken by a qualified plumber or installer on completion of the final design.

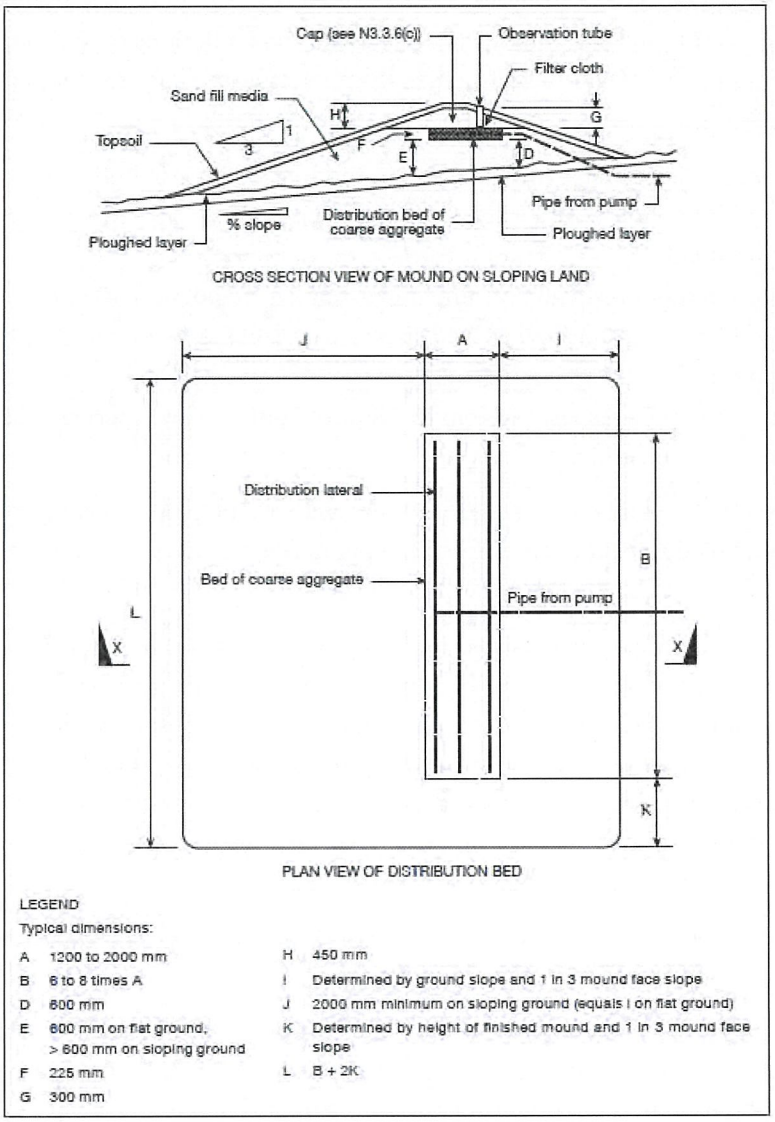

Plate 3: Wisonsin Mound System (from AS/NZS 1547:2012)

5 SUMMARY

On behalf of the landowners, Harley Dykstra Pty Ltd, is seeking to subdivide Lot 49 (HSE 158) Capel Drive, Capel into four lots, with three new lots being created to the east of the existing dwelling. A SSE is required to support the subdivision.

This SSE report has been prepared to support the proposed subdivision and development of the subject site. It investigates the existing environment and the suitability of the subject site for onsite effluent disposal and the appropriate location for onsite effluent disposal in accordance with the relevant regulations and guidelines.

The use of onsite effluent disposal within the subject site is considered suitable provided a combination of the following measures are implemented:

- The use of conventional onsite effluent disposal systems such as septic tanks and leach drains is considered suitable for the subject site if sufficient separation to groundwater can be achieved;
- Apply secondary treatment with nutrient retention abilities to minimise the risk of nutrient leaching to groundwater where irrigation systems are used or 1.5 m of separation to groundwater cannot be achieved;
- Plant vegetation requiring high nutrients to encourage evapotranspiration;
- Import soil to raise ground levels and increase soil volume surrounding disposal systems, if required; and
- Increase the size of the disposal system to distribute effluent and therefore nutrients over a large application area, if possible.

Based on this assessment and compliance with the above management measures, Accendo considers that the subject site is suitable for onsite effluent disposal.

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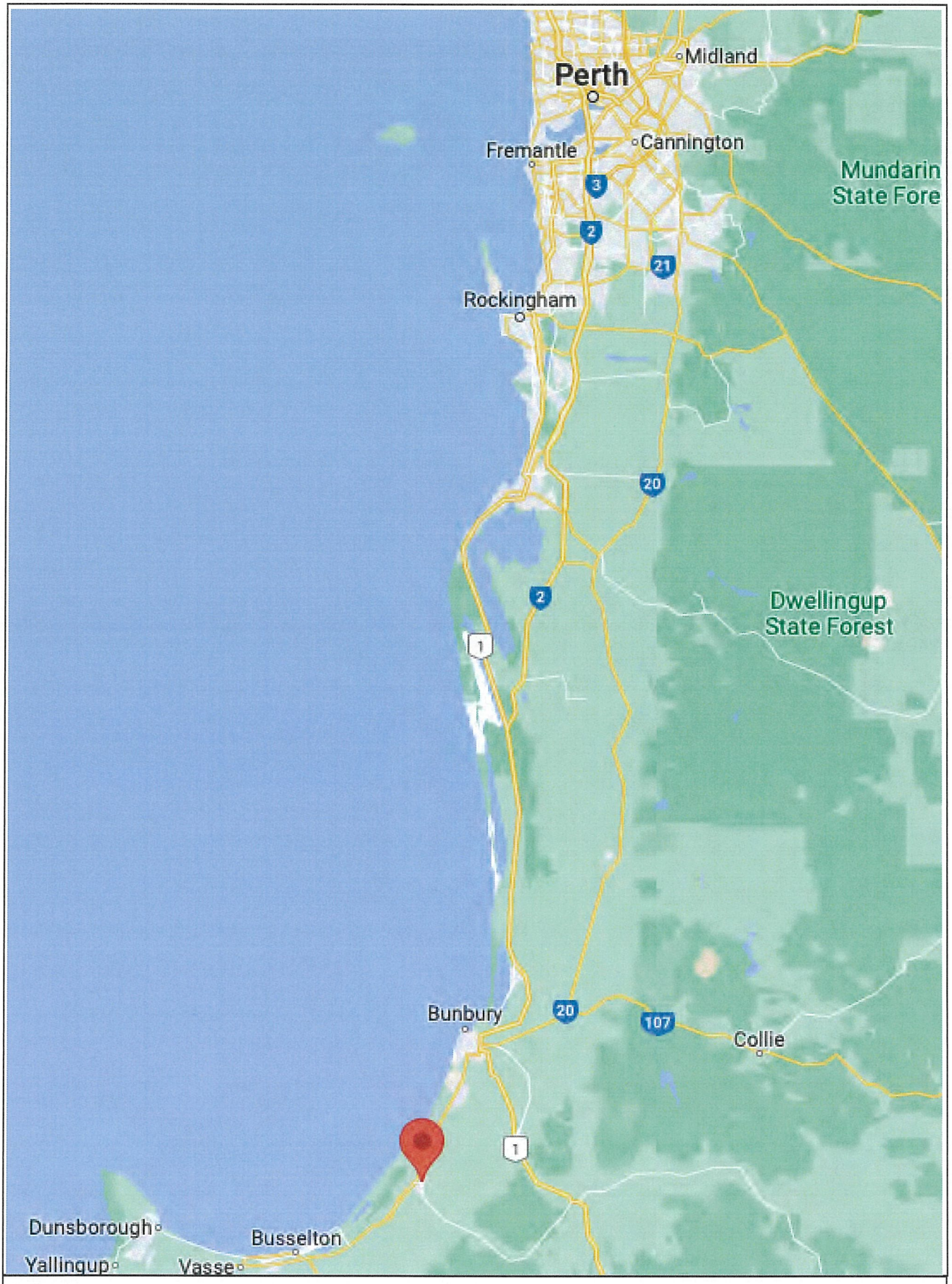
FIGURES



PROJECT	Lot 49 (158) Capel Drive, Capel			
DRAWING TITLE	Figure 1 – Site Locality	Project Number	Drawing Number	Revision
		2531	Figure 1	A
CLIENT	Harley Dykstra	Designed NC Drawn PN	Checked Approved	
		Date	27/05/2025	
		Local Authority	Shire of Capel	
		Sheet 1 of 1		

PO Box 5178
West Busselton
Western Australia 6280
Mobile 0418 950 852

Legend

- Site boundary
- Proposed lot boundaries
- Test pit locations

0 10 20 m

PROJECT	Lot 49 (158) Capel Drive, Capel
DRAWING TITLE	Figure 2- Site extent
CLIENT	Harley Dykstra

accendo AUSTRALIA
PO Box 5178
West Busselton
Western Australia 6280
Mobile 0418 950 852

Project Number	2531	Designed	NC
Drawing Number	Figure 2	Drawn	PN
Revision	A	Checked	
Date	27/05/2025	Approved	
Sheet 1 of 1		Local Authority	Shire of Capel

PROJECT Lot 49 (158) Capel Drive, Capel

DRAWING TITLE Figure 3- Surface water features

CLIENT Harley Dykstra

accendo AUSTRALIA

PO Box 5178
West Busselton
Western Australia 6280
Mobile 0418 950 852

Project Number	2531	Designed	NC
Drawing Number	Figure 3	Drawn	PN
Revision	A	Checked	
Date	27/05/2025	Approved	
Sheet 1 of 1		Local Authority	Shire of Capel

APPENDIX A – SUBDIVISION PLAN

CONCEPT PLAN

Lot 49 on (No. 158) Capel Drive, CAPEL

Plan No.	24544-01
Date	19/05/25
Drawn	TJ
Checked	AR
Revision	A
Scale	1:750@A3

0 10m 20m

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

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

APPENDIX B - LABORATORY CERTIFICATES

Winechek
PRECISION BASED EXPERTISE

www.winechek.com ABN: 93 604 651 845

VIC (Site A)
1/22 Hightech Place
Lilydale VIC, 3140
T: 03 9735 2155
E: lab-yarra@winechek.com

WA (Site B)
3/53 Wrigglesworth Drive
Cowaramup WA, 6284
T: 0400 032 034
E: lab-wa@winechek.com

SA (Site C)
10 Kalimna Road
Nuriootpa SA, 5355
T: 08 8562 1044
E: lab-barossa@winechek.com

NSW (Site D)
43 Bradmill Avenue
Rutherford NSW, 2320
T: 02 4932 0127
E: lab-nsw@winechek.com

LABORATORY REPORT NUMBER: B2505193

Accendo Australia
PO Box 5178
West Busselton WA 6280
Phone 08 9755 7217

Purchase Order
Sample(s) Received 13/05/2025
Report Type Final
Issue Preferences kirsten@accendoaustralia.com.au

Sample Number	Sample Details
B2505193/01	#2531 158 Capel Drive TH1

Test	Result	Unit	Test Site	Date Analysis Commenced
Phosphorous Retention Index (VLSM06#)	2.0		B	13/05/2025

Sample Number	Sample Details
B2505193/02	#2531 158 Capel Drive TH2

Test	Result	Unit	Test Site	Date Analysis Commenced
Phosphorous Retention Index (VLSM06#)	6.6		B	13/05/2025

Sample Number	Sample Details
B2505193/03	#2531 158 Capel Drive TH3

Test	Result	Unit	Test Site	Date Analysis Commenced
Phosphorous Retention Index (VLSM06#)	5.4		B	13/05/2025

Carly Gamble
Approved Signatory
Vintessential Laboratories

Date Report Issued
15/05/2025

The above results refer to the sample analysed as received.
* Indicates determination by NATA accredited method.
# NATA accreditation does not cover the performance of this method
Method Uncertainty (MU) data for accredited method results: https://winechek.com/certification/

APPENDIX C – SOIL LOGS

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SOIL LOG

PROJECT NUMBER 2531
PROJECT NAME 158 Capel Drive, Capel
CLIENT Harley Dykstra Pty Ltd
DATE09/05/2025

BORE NAME TH1
CONDITIONS Sunny
TOTAL DEPTH 0.9
DEPTH TO WATER NA
METHOD Shovel

COORDINATES -33.54583,115.56659
COORD SYS MGA 94-50
LOGGED BY PN

COMMENTS

Depth (m)	Samples	Analysed	Graphic Log	Material Description	Moisture	Additional Observations
0.1				Light brown, moderate grained no cohesion. Very dry.	D	
0.2				Light brown/orange sand moderated grained. No cohesion.		
0.3						
0.4	PRI					
0.5				Brown sand bits of dark brown/black sand throughout. Few pea sized rocks and clumps of clay. Fine to medium grained, dry.		
0.6						
0.7						
0.8						
0.9				Hole terminated at 0.9 m BGL due to refusal of shovel, clay layer.		
1						
1.1						
1.2						
1.3						
1.4						

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SOIL LOG

PROJECT NUMBER 2531
PROJECT NAME 158 Capel Drive, Capel
CLIENT Harley Dykstra Pty Ltd
DATE 09/05/2025

BORE NAME TH2
CONDITIONS Sunny
TOTAL DEPTH 0.75
DEPTH TO WATER NA
METHOD Shovel

COORDINATES -33.54615,115.56611
COORD SYS MGA 94-50 **LOGGED BY** PN

COMMENTS

Depth (m)	Samples	Analysed	Graphic Log	Material Description	Moisture	Additional Observations
0.1				Dry. Organic matter, dark brown and yellow sand. No cohesion and fine grained.	D	
0.2				Yellow and light brown sand. Moderate grained and no cohesion.		
0.3						
0.4	PRI			Grey sand, pea sized gravel. Fine grained.		
0.5						
0.6						
0.7						
0.8				Hole terminated at 0.75 m BGL due to refusal of shovel, clay layer.		
0.9						
1						
1.1						
1.2						
1.3						
1.4						

SOIL LOG

PROJECT NUMBER 2531
PROJECT NAME 158 Capel Drive, Capel
CLIENT Harley Dykstra Pty Ltd
DATE09/05/2025

BORE NAME TH3
CONDITIONS Sunny
TOTAL DEPTH 1.15 m
DEPTH TO WATER NA
METHOD Hand auger

COORDINATES -33.54597,115.56590
COORD SYS MGA 94-50
LOGGED BY PN

COMMENTS

Depth (m)	Samples	Analysed	Graphic Log	Material Description	Moisture	Additional Observations
0.1				Light brown sand. Moderate grained and no cohesion. Dry.	D	
0.2				Light brown sand. slight cohesion, moderate grained no cohesion. Small bits of very fine grained black clay.		
0.3						
0.4	PRI					
0.5						
0.6						
0.7						
0.8				Orange clay sand. Fine to moderate grained, moderate cohesion.		
0.9						
1						
1.1						
1.2				Hole terminated at 1.15 m BGL due to refusal of hand auger, clay layer.		
1.3						
1.4						
1.5						
1.6						
1.7						
1.8						
1.9						
2						
2.1						
2.2						
2.3						
2.4						

Appendix D **Noise Impact Statement**

Our Ref: 24544

30 June 2025

Harley Dykstra
SURVEYING | TOWN PLANNING | PROJECT MANAGEMENT

WAPC State Planning Policy 5.4 – Road and Rail Noise

The subject site is located within the trigger distance of State Planning Policy 5.4 Road and Rail Noise (SPP 5.4).

The subject site is situated on the eastern side of Capel Drive in Capel with a speed limit of 60km/hr in this location.

Table 2 within the Road and Rail Noise Guidelines assists in the forecast noise exposure category based on lot distance(m) from edge of nearest main road carriageway. The assessment below, was based on a 2 lane Other Significant Freight/Traffic route and screening protection from the existing dwelling and sheds on the property, which has been calculated to occupy more than 50% of the exposed frontage:

Lot	Distance to Carriageway (Boundaries)	Forecast Exposure Category (Minimum Distance)	Reduction from screening (Maximum Distance)	House Package	
A	Existing Dwelling				
B	69 - 100m	58dB	54dB	A	No further measures
C	96 - 133m	56dB	52dB	A	No further measures
D	68 - 182m	54dB	50dB	No further measures	

The table excludes calculations for proposed Lot A as the lot accommodates an existing dwelling with no new dwellings being created as a result of future development.

The calculation identifies that all proposed lots can be satisfactorily developed to comply with SPP 5.4 without the need for mitigation measures. In the event that a dwelling is located within 60m of Capel Road, within proposed Lots B & C, the acoustic levels can be managed through the design of a ***Quiet House Package A***.

Table 3 of the Guidelines outlines examples of Quiet House construction requirements and orientation of outdoor living area to achieve the acoustic rating and an acceptable solution in term of noise management.