Notice of Application for a Planning Permit

Cardinia

The land affected by the application is located at:	L3 LP133697 V9380 F435 23 Ryan Road, Pakenham VIC 3810
The application is for a permit to:	Subdivision of land into two (2) lots, removal of vegetation and creation of an easement

A permit is required under the following clauses of the planning scheme:

32.03-3	Subdivide land
43.02-3	Subdivide land
42.02-2	Remove, destroy or lop vegetation
52.02	To proceed under Section 23 of the Subdivision Act 1988 to create an easement

APPLICATION DETAILS

The applicant for the permit is:	Ryan Road Pakenham Pty Ltd
Application number:	T250696

You may look at the application and any documents that support the application at the office of the Responsible Authority:

Cardinia Shire Council, 20 Siding Avenue, Officer 3809.

This can be done during office hours and is free of charge.

Documents can also be viewed on Council's website at cardinia.vic.gov.au/advertisedplans or by scanning the QR code.

HOW CAN I MAKE A SUBMISSION?

This application has not been decided. You can still make a submission before a decision has been made. The Responsible Authority will not decide on the application before:		**07 April 2026**
WHAT ARE MY OPTIONS? Any person who may be affected by the granting of the permit may object or make other submissions to the responsible authority. If you object, the Responsible Authority will notify you of the decision when it is issued.	An objection must: • be made to the Responsible Authority in writing; • include the reasons for the objection; and • state how the objector would be affected.	The Responsible Authority must make a copy of every objection available at its office for any person to inspect during office hours free of charge until the end of the period during which an application may be made for review of a decision on the application.

1 Application lodged — 2 Council initial assessment — 3 Notice (Application is here) — 4 Consideration of submissions — 5 Assessment — 6 Decision

Cardinia ePlanning

Application Summary

Portal Reference	A4251BGN

Basic Information

Proposed Use	Two Lot Subdivision and Removal of Vegetation
Current Use	Single Dwelling
Cost of Works	$0
Site Address	23 Ryan Road Pakenham 3810

Covenant Disclaimer

Does the proposal breach, in any way, an encumbrance on title such as restrictive covenant, section 173 agreement or other obligation such as an easement or building envelope?	No such encumbrances are breached

☐ Note: During the application process you may be required to provide more information in relation to any encumbrances.

Contacts

[redacted]

Fees

Regulation	Fee Condition	Amount	Modifier	Payable
9 - Class 18	To subdivide land into two lots	$1,496.10	100%	$1,496.10
9 - Class 19	To effect a realignment of a common boundary between lots or to consolidate two or more lots	$1,496.10	50%	$748.05
		Total		**$2,244.10**

Meetings

[redacted]

Civic Centre
20 Siding Avenue, Officer, Victoria

Council's Operations Centre (Depot)
Purton Road, Pakenham, Victoria

Postal Address
Cardinia Shire Council
P.O. Box 7, Pakenham VIC, 3810

Email: mail@cardinia.vic.gov.au

Monday to Friday 8.30am–5pm
Phone: 1300 787 624
After Hours: 1300 787 624
Fax: 03 5941 3784

Documents Uploaded

Date	Type	Filename
13-11-2025	Subdivision Plan	A2_Plan of Subdivision.pdf
13-11-2025	Encumbrance	A1_Copy of Title.pdf
13-11-2025	Explanatory Letter	A_Planning Report_Two lot subdivision_23 Ryan Road Pakenham.pdf
13-11-2025	Additional Document	A6_Feature and Level Survey.pdf
13-11-2025	Additional Document	A5_Biodiversity Assessment.pdf
13-11-2025	Additional Document	A4_Sewer Design Plans.pdf
13-11-2025	Additional Document	A3_Arborist Impact Assessment.pdf

☐ Remember it is against the law to provide false or misleading information, which could result in a heavy fine and cancellation of the permit

Lodged By

[redacted]

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Cardinia ePlanning

Revision Summary

Portal Reference	RI2639QU
Reference No	T250696

Basic Information

Proposed Use	Two Lot Subdivision, Removal of Vegetation and addition of an easement
Current Use	Single Dwelling
Cost of Works	$0
Revised Cost of Works	$10,000
Revisions	Permit Conditions Plans Changed
Proposed Changes	Include a sewer easement on the southern boundary of proposed Lot 2 for the benefit of proposed Lot 1 in accordance with Clause 52.02 A permit is required before a person proceeds under Section 23 of the Subdivision Act 1988 to create, vary or remove an easement or restriction. The Proposed Plan of Subdivision has been amended.
Site Address	23 Ryan Road Pakenham VIC 3810

Covenant Disclaimer

Does the proposal breach, in any way, an encumbrance on title such as restrictive covenant, section 173 agreement or other obligation such as an easement or building envelope?	No such encumbrances are breached

☐ Note: During the application process you may be required to provide more information in relation to any encumbrances.

Contacts

[redacted]

Regulation	Fee Condition	Amount	Modifier	Payable
12 -	As advertising has not occurred there is no charge for this revision.	-	-	-
		Total		**$0.00**

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Lodged By

[redacted]

REGISTER SEARCH STATEMENT (Title Search) Transfer of Land Act 1958

VOLUME 09380 FOLIO 435

Security no : 124129848949R
Produced 12/11/2025 04:17 PM

LAND DESCRIPTION

Lot 3 on Plan of Subdivision 133697.
PARENT TITLE Volume 09323 Folio 658
Created by instrument LP133697 13/06/1980

REGISTERED PROPRIETOR

Estate Fee Simple

[redacted]

ENCUMBRANCES, CAVEATS AND NOTICES

MORTGAGE AU449252W 11/06/2021
COMMONWEALTH BANK OF AUSTRALIA

CAVEAT AZ132173R 09/05/2025
Caveator
SPROUT ACQUISITIONS PTY LTD ACN: 684812495
Grounds of Claim
PURCHASERS' CONTRACT WITH THE FOLLOWING PARTIES AND DATE.
Parties
THE REGISTERED PROPRIETOR(S)
Date
24/04/2025
Estate or Interest
FREEHOLD ESTATE
Prohibition
ABSOLUTELY
Lodged by
DANAHER MOULTON
Notices to
DANAHER MOULTON of LEVEL 1 276 HIGH STREET KEW VIC 3101

Any encumbrances created by Section 98 Transfer of Land Act 1958 or Section 24 Subdivision Act 1988 and any other encumbrances shown or entered on the plan or imaged folio set out under DIAGRAM LOCATION below.

DIAGRAM LOCATION

SEE LP133697 FOR FURTHER DETAILS AND BOUNDARIES

ACTIVITY IN THE LAST 125 DAYS

NIL

----------END OF REGISTER SEARCH STATEMENT----------

Additional information: (not part of the Register Search Statement)

Street Address: 23 RYAN ROAD PAKENHAM VIC 3810

ADMINISTRATIVE NOTICES

NIL

eCT Control 15940N COMMONWEALTH BANK OF AUSTRALIA
Effective from 11/06/2021

DOCUMENT END

Imaged Document Cover Sheet

The document following this cover sheet is an imaged document supplied by LANDATA®, Secure Electronic Registries Victoria.

Document Type	**Plan**
Document Identification	**LP133697**
Number of Pages (excluding this cover sheet)	**1**
Document Assembled	**12/11/2025 16:17**

LP133697
EDITION 1
APPROVED 20/ 5/80

PLAN OF SUBDIVISION
PART OF CROWN ALLOTMENT 38
PARISH OF NAR-NAR-GOON
COUNTY OF HORSHAM

LENGTHS ARE IN METRES

SURVEYORS CERTIFICATION

APPROPRIATIONS

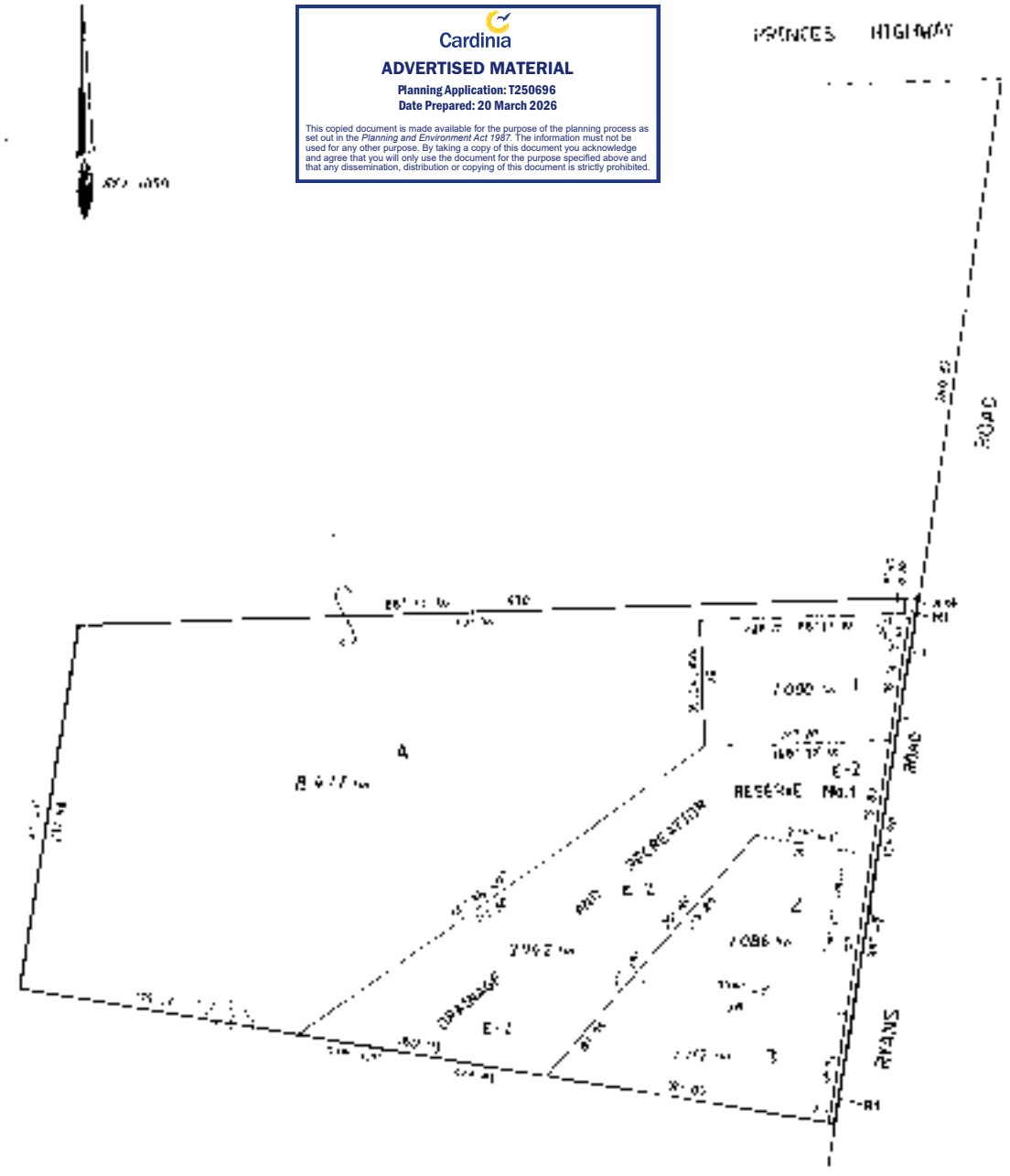
BROWN - ... DRAINAGE ... AND SEWERAGE

GREEN - DRAINAGE

Vol. 9323 Fol. 698

COLOUR CONVERSION
E-1 = BROWN
E-2 = GREEN

CHART NO. 6A



St. Quentin

51 Lt Fyans St,
South Geelong, 3220
PO Box 919 Geelong 3220

03 5201 1811
admin@stqc.com.au
www.stqc.com.au

Ref: 18526

25 February 2026

[redacted]ner
Cardinia Shire Council

Dear Janani,

RE: T250696 23 Ryan Road Pakenham
Subdivision of land into two (2) lots and removal of vegetation

Please accept this correspondence as response to the Further Information Letter dated 11 December 2025. This correspondence should be read with the following attachments:

- ✓ Arboricultural Impact Assessment_Jan 2026
- ✓ Stormwater Strategy
- ✓ Plan of Subdivision

Council's further information requests included five items. We have responded to each respective dot point below:

Updated Application Form

1. Online application form has been updated which includes a cost estimate for the removal of vegetation.

Written Submission

2.

a. The planning permit application has been amended to include the sewer easement on the southern boundary of proposed Lot 2 for the benefit of proposed Lot 1. In accordance with Clause 52.02 *A permit is required before a person proceeds under Section 23 of the Subdivision Act 1988 to create, vary or remove an easement or restriction, or vary or remove a condition in the nature of an easement in a Crown grant.* The easement has been included in anticipation of South-East Water asking for this easement as part of the certification of the Plan of Subdivision. The actual width of the easement may be varied prior to certification of the subdivision.

b. A property connection sewer will be connected from the Sewer Mains to Lot 1 along the proposed easement. This connection will be done to the satisfaction of South-East Water and prior to Statement of Compliance. The actual specifics are not yet known, nor is the impact the trenching may have on any Structural Root Zones or Tree Protection Zones. The applicant would prefer that a separate planning application is lodged, if the trenching of the future sewer connection requires any

tree removal. As stated, this would be done post permit but prior to Statement of Compliance.

Vegetation

3.

a. The Arborist Impact Assessment has modified figure 3 to show only the trees that need removal as a result of the two lot subdivision. These are Trees 2, 22, 29, 32 (battleaxe driveway), 31, 40 (lot 1 building envelope) 12, 13, 16, 19, 23 (exempt) & 84 (lot 2 building envelope)
b. The Vegetation Protection Overlay – Schedule 1 application requirements include:

A photograph or site plan (drawn to scale) showing the boundaries of the site, existing vegetation and the vegetation to be removed.	Se Arboriculture Impact Assessment.
A description of the vegetation, including understorey to be removed, including the species, extent, number and size (diameter at 1.3 metres above natural ground level) of any trees to be removed and the Ecological Vegetation Class of native vegetation.	See Arboriculture Impact Assessment and Biodiversity Assessment.
Location of any hollow bearing trees.	See Biodiversity Assessment.
Topographic information, highlighting ridges, crests and hilltops, streams and waterways, slopes of more than 20 percent, drainage lines, low lying areas, saline discharge areas, and areas of existing erosion	See Feature and Level Survey.
A written explanation of the steps that have been taken to: *Avoid the removal of vegetation, where possible.* *Minimise the removal of vegetation.* *Any actions to contribute to the ongoing management of existing vegetation on the site.* *Appropriately replace and/or compensate the loss of vegetation, if required*	The battleaxe driveway to Lot 2 requires the removal of trees 2, 22, 29 & 32. Tree 29 is medium value and trees 22 & 32 are low value. Tree 2 is the street tree. The southern side of the property is the best option for the battleaxe driveway as there are less trees than the northern side of the allotment where 19 trees would need to be removed for a battleaxe driveway including 3 medium value and 2 street trees. Tree 84 is required to be removed for the building envelope on Lot 2. This is a low value tree. Trees 31 & 40 are to be removed for the building envelope on Lot 1. These trees are identified as having medium arboricultrual value. Moving the building envelope to the northern side of Lot 1 would alternatively impact on Trees 33 and 25. Although of a similar medium value health and structure, Trees 33 and 25 are taller with larger crown spreads and it was decided that they should be retained instead of Trees 31 & 40.

	Trees 12, 13, 16, 19 and 23 are exempt from planning permission as they are within 10 metres of the existing house and within a Bushfire Prone Area. Overall, three medium value trees (Australian Natives) and one street tree (exotic) need to be removed. All other trees are either exempt or low or no value trees. To compensate for the loss of these three medium value Australian Natives and eight lower value trees, the applicant welcomes a condition to plant 5-10 additional natives on Lot 2.
A copy of any property vegetation plan that applies to the site	Not applicable.
Where the removal, destruction or lopping of vegetation is to create defendable space, a statement explaining why removal, destruction or lopping of vegetation is required having regard to other available bushfire risk mitigation measures. This does not apply to the creation of defendable space in conjunction with an application under the Bushfire Management Overlay.	Not applicable.

Tree Removal Plan

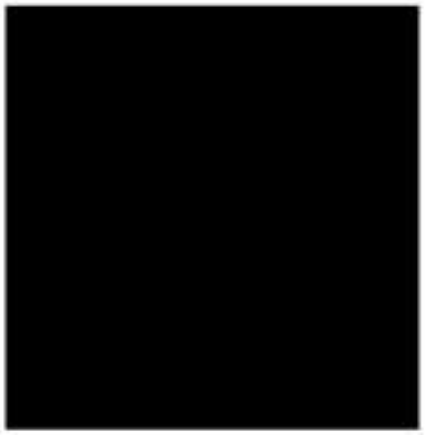
4.

a. The tree removal plan with building envelopes, tree numbers, tree value, notional and structural root zones is shown at Figure 3 of the Arboricultural Impact Assessment.

Stormwater

5. A Stormwater Management Plan prepared by MRM Group has been attached with this letter. The Strategy states that Lot 1 will discharge to Ryan Road where there is an existing 300mm diameter drain. On-site detention is not needed for the two-lot subdivision, however if the childcare centre is approved, then an on-site detention system and water sensitive urban design treatment.

   The Strategy states that Lot 2 will have a future connection of Deep Creek Drainage System, subject to Melbourne Water approval. This is a logical future discharge path for the rear lot. It is anticipated that any future development of Lot 2 would incorporate on-site detention system and water sensitive urban design treatment.



St Quentin

PLANNING REPORT

Two Lot Subdivision and Removal of Vegetation @ 23 Ryan Road Pakenham

Document Control

Document Title: Planning Report

Docume [redacted]

Client: Ryan Road Pakenham Land Pty Ltd

Job No: 18526

Version No	Date created	Comments
1	18/07/2025	DRAFT
2	12/11/2025	DRAFT
3		

Contents

1. Introduction

St Quentin has been instructed to prepare this planning report in relation to the Two Lot Subdivision and removal of vegetation at 23 Ryan Road Pakenham.

The purpose of this report is to detail the proposal and its context, outline its consistency with the relevant strategic framework and statutory controls, and in doing so explain why the proposal is worthy of Council's support and approval.

This report is supported by and should be read in conjunction with the following supporting documentation:

Appendix 1: Copy of Title

Appendix 2: Plan of Subdivision

Appendix 3: Arborist Impact Assessment

Appendix 4: Sewer Design Plans

Appendix 5: Biodiversity Assessment

Appendix 6: Feature and Level Survey

2. Key Considerations

The key considerations for Council to assess within this planning application are as follows:

Child Care Centre Application

A concurrent planning application for the buildings and works and use of a Child Care Centre has been submitted for the site. The Child Care Centre site will be situated on proposed Lot 1. The application includes a single storey building, outdoor play areas and a car park suitable for 114 children. Acoustic fencing and additional landscaping on proposed Lot 1 will assist in obtaining an approval from Council for this application.

The two-lot subdivision is expected to proceed more quickly than the Child Care Centre application and construction. Therefore, the applications have been submitted separately.

Sewer Connection

There is an existing sewer main to the south-west of the site at 2A Pinehill Drive. The sewer main is being extended over 2C Pinehill Drive to the south-west corner of 23 and 25 Ryan Road. Once the sewer main is extended, proposed Lot 1 and 2 will be able to connect. This will obviate the need for either lot to provide an area of effluent disposal on site. It is expected the sewer main extension will be constructed by the time this planning application is determined.

3. Setting

3.1. Subject Site

Figure 1: Subject site (Source: Landchecker 01/02/2025)

Street Address:	23 Ryan Road Pakenham
Title Details:	Lot 3 LP133697
Restrictions/Covenants:	Nil
Land Size:	11,122m^2
Zone:	Low Density Residential Zone- Schedule 2 (LDRZ2)
Overlays:	Design and Development Overlay – Schedule 1 (DDO1) Vegetation Protection Overlay – Schedule 1 (VPO1)
Other Regulatory Constraints:	Area of Cultural Heritage Sensitivity Bushfire Prone Area

Key Site Features:	A detached house is located on site in the south-eastern corner near Ryans Road. A crossover and driveway is at the north-eastern corner of the block providing vehicle access into the site and to a shed located directly behind the dwelling. Some scattered trees throughout the block but the majority of the vegetation is along the perimeter. The site falls from east to west by approximately 2.5 metres. Ryan Road provides a sealed carriageway of approximately 7.8m with kerb and channel provided on both sides.

3.2. Surrounding Context

The western side of Ryan Road is a Low Density Residential Zone (LDRZ) with lots ranging from 4,000 to 12,000m^2 in size. The sites are relatively flat with a slight grade down towards Deep Creek to the west. Most properties have some canopy trees but overall the surrounds have well managed lawns and low fuel loads. Deep Creek and the Pakenham and District Golf Club are located to the west providing an urban break between the Pakenham Urban Area and the Urban Growth Zone to the east.

Access to Princes Highway is approximately 900m to the north with the Princess Highway taking vehicles directly into Pakenham and beyond to Berwick. Approximately 1,100m to the south is the East Pakenham Train Station. A three kilometer drive through the Pakenham Industrial Estate will provide access to Princes Freeway taking vehicles direct to Melbourne CBD.

East of Ryan Road is the Urban Growth Zone and these new estates have completed their first stages of development with some housing having already established. New housing will be located throughout the Urban Growth Zone within a few years, at a minimum of 15 dwellings per net developable hectare. The properties fronting Ryans Road are in the 'Interface Housing Area 1' which consist of larger lots, with a proposed density of 12 dwellings per net developable hectare to provide a transitional interface to the LDRZ area.

Figure 2: Surrounding context (Source: Landchecker 08/01/2025)

North:	Low Density Residential Zone on the west side of Ryan Road to the Princes Highway. Urban Growth Zone on the eastern side of Ryan Road.
South:	Low Density Residential Zone on the west side of Ryan Road to the East Pakenham Train Station and Princes Freeway. Urban Growth Zone on the eastern side of Ryan Road.
East:	Urban Growth Zone on east side of Ryan Road between Princes Highway in the north and Princes Freeway in the south.
West:	Deep Creek and Golf Course within the Public Pak and Recreation Zone.

4. Proposal

4.1. Proposal Description

Two Lot Subdivision

The application is for the subdivision of the site into two lots. Proposed Lot 1 will front Ryan Road with a width and depth of 63 metres resulting in a Lot of 4,009m^2. Proposed Lot 2 will have a 6.1 metre wide battleaxe handle providing access to Ryan Road. Lot 2 will make up the remainder of the parent title resulting in a Lot of 7,105m^2.

E-1 is proposed for the purpose of drainage and sewerage and to be located along the southern boundary.

Indicative building envelopes have been provided on sheet three of the proposed plan of subdivision.

Vegetation Removal

There is an existing driveway and crossover into Lot 1 so no vegetation is lost for vehicle access into the lot. The indicative building envelope will result in the removal of Trees 31 and 40 which are planted Australian Natives. The Arborist Report identifies them as medium arboriculture value and requires a permit to remove in accordance with the Vegetation Protection Overlay.

The building envelope will also impact on Trees 19 and 23. However, these two trees are within 10 meters of the existing house. They are both exempt in accordance with Clause 52.12-1 of the Cardinia Planning Scheme as the building is located in an area that is designated as a bushfire prone area, is within 10 metres of an existing building used for accommodation and the building was constructed before 2009.

To create the battleaxe handle to Ryan Road and driveway for Lot 2, the removal of four trees is necessary. Tree 2 is an exotic street tree, trees 22 and 32 are considered low or no value and tree 29 is an Australian native with medium value. The large building envelope for Lot 2 shows that Tree 84 (low value tree) should also be removed.

There is some overlap with the trees recommended for removal as part of the Child Care Centre application. Trees 19, 23, 31, and 40 are required to be removed for the Child Care Centre and the Two Lot Subdivision.

Lot 1 and 2 are going to be connected to the extended sewer main, so no more trees are to be removed to facilitate areas for on-site effluent disposal.

4.2. Permit Triggers

Use	Development	Subdivision	Other
		Clause 32.03-3 LDRZ *A permit is required to subdivide land* ***Clause 43.02-3 DDO*** *A permit is required to subdivide land.*	***Clause 42.02-2 VPO*** *A permit is required to remove, destroy or lop any vegetation specified in a schedule to this overlay.*

5. Strategic Context & Response

The key planning, land use and development policies relevant to the consideration and assessment of the proposal are as follows.

5.1. Planning Policy Framework

Clause 15.01-3S Subdivision Design

Objective

To ensure the design of subdivisions achieves attractive, safe, accessible, diverse and sustainable neighbourhoods.

Strategies (relevant)

In the development of new residential areas and in the redevelopment of existing areas, subdivision should be designed to create liveable and sustainable communities by:

- *Providing a range of lot sizes to suit a variety of dwelling and household types to meet the needs and aspirations of different groups of people.*
- *Protecting and enhancing habitat for native flora and fauna and providing opportunities for people to experience nature in urban areas.*

Response

The proposed application is creating two rural residential lots greater than 4,000m^2. The lots are still a manageable size and will have a negligible impact on native flora and fauna.

Clause 15.01-5S Neighbourhood Character

Objective

To recognise, support and protect neighbourhood character, cultural identity, and sense of place.

Strategies

Support development that respects the existing neighbourhood character or contributes to a preferred neighbourhood character.

Ensure the preferred neighbourhood character is consistent with medium and higher density housing outcomes in areas identified for increased housing.

Ensure development responds to its context and reinforces a sense of place and the valued features and characteristics of the local environment and place by respecting the:

- *Pattern of local urban structure and subdivision.*
- *Underlying natural landscape character and significant vegetation.*
- *Neighbourhood character values and built form that reflect community identity.*

Response

The proposed lots are reflective of the existing lot sizes on the east side of Ryan Road. There is limited vegetation removal for the creation of both lots and the removal is predominantly for low or no value trees.

Clause 21.03-5 Rural Residential and rural living development

Objectives (relevant)

To ensure development reflects a high quality of design and does not result in environmental degradation.

Strategies (relevant)

Ensure subdivisions and developments are designed to take into account the constraints of the area and limit detrimental impacts to the surrounding environment.

Ensure that any proposal for rural residential and rural living development is assessed in relation to its ability to contain all wastewater within the site.

Response

Both lots will be connected to an extended sewer main. This limits any impacts on-site effluent disposal may have on the nearby creek. There are no other constraints with this land.

6. Statutory Context & Response

6.1. Zone

The subject site is contained within the Low-Density Residential Zone- Schedule 2.

The purpose of the zone is:

To implement the Municipal Planning Strategy and the Planning Policy Framework.

To provide for low density residential development on lots which, in the absence of reticulated sewerage, can treat and retain all wastewater.

Clause 32.03-3 Subdivision

A permit is required to subdivide land.

Each lot must be at least the area specified for the land in a schedule to this zone.

Schedule 2 of the LDRZ states the minimum subdivision area is 0.4 hectares.

Decision Guidelines

Before deciding on an application, in addition to the decision guidelines in Clause 65, the responsible authority must consider, as appropriate:

Decision Guidelines	Response
The Municipal Planning Strategy and the Planning Policy Framework.	See Section 5 of this report.
The protection and enhancement of the natural environment and character of the area including the retention of vegetation and faunal habitat and the need to plant vegetation along waterways, gullies, ridgelines and property boundaries.	The Ecologist Report prepared by Ecolink, has determined that there is no remnant vegetation on the site. There are indigenous and exotic canopy trees throughout the site which is an important element of the landscape character and visual amenity. The removal of nine trees is required for the vehicle access and generous building envelopes.
The availability and provision of utility services, including sewerage, water, drainage, electricity and telecommunications.	Sewer, main water and electricity will be available for both lots.
In the absence of reticulated sewerage: - *The capability and suitability of the lot to treat and retain all wastewater as determined by a Land Capability Assessment on the risks to human health and the environment of an on-site wastewater management system*	The lots will be connected to sewer, so a Land Capability Statement is not required. Both lots are less than two hectares in size.

constructed, installed, or altered on the lot in accordance with the requirements of the Environment Protection Regulations under the Environment Protection Act 2017. - *The benefits of restricting the size of lots to generally no more than 2 hectares to enable lots to be efficiently maintained without the need for agricultural techniques and equipment.*	
The relevant standards of Clauses 56.07-1 to 56.07-4.	Standard C22. Drinking water will be available via the water main connection for each lot. Standard C23. There is no recycled water in this location. Standard C24. Connection to Sewer main will be available for each lot. Standard C25. Ryan Road has underground stormwater pipes. Both lots fall towards Ryan Road to the east and therefore this will be the legal point of discharge for both proposed lots.

6.2. Overlays

Design and Development Overlay – Schedule 1

The subject site is contained within the Design and Development Overlay – Schedule 1 (DDO1).

A permit is required to subdivide land.

The Design Objectives of DDO1 are:

- *To ensure that the location and design of buildings create an attractive low density residential environment.*
- *To ensure that any development has regard to the environmental features and constraints of the land.*
- *To ensure that the subdivision of land has regard to the existing pattern of subdivision in the area.*

Before deciding on an application, in addition to the decision guidelines in Clause 65, the responsible authority must consider, as appropriate.

Decision Guidelines	Response
The Municipal Planning Strategy and the Planning Policy Framework.	See Section 5 of this report.

The design objectives of the relevant schedule to this overlay.	The proposal has considered the environmental features of the site, namely the canopy trees protected by the VPO. The majority of medium and high value trees are avoided. Six trees considered as low or no value are proposed for removal, two medium value trees and one street tree. None of these trees are remnant.
The provisions of any relevant policies and urban design guidelines.	Not Applicable.
Whether the bulk, location and appearance of any proposed buildings and works will be in keeping with the character and appearance of adjacent buildings, the streetscape or the area.	No buildings proposed as a result of this subdivision.
Whether the design, form, layout, proportion and scale of any proposed buildings and works is compatible with the period, style, form, proportion, and scale of any identified heritage places surrounding the site.	No heritage places in the immediate vicinity.
Whether any proposed landscaping or removal of vegetation will be in keeping with the character and appearance of adjacent buildings, the streetscape or the area.	The majority of vegetation and trees are being retained. A total of 9 trees are required for removal with 6 being classified as low or no value trees by the Arborist. The majority of the mature canopy trees on site are being retained.
The layout and appearance of areas set aside for car parking, access and egress, loading and unloading and the location of any proposed off street car parking	Proposed Lot 1 has an existing vehicle crossover and access. Proposed Lot 2 will use a 6.1m wide battleaxe handle to access Ryan Road.
Whether subdivision will result in development which is not in keeping with the character and appearance of adjacent buildings, the streetscape or the area.	The subdivision proposal will result in two lot sizes which are consistent with the surrounding area.
Schedule 1	
The Land Capability Study for the Cardinia Shire (February 1997).	Both lots will be connected to sewer mains therefore a Lands Capability Assessment is not required.
The protection and enhancement of the natural environment and character of the area including	As shown in the Ecologist Report there is no remnant vegetation on the site. Existing trees

the retention of remnant vegetation and habitat, and the need to plant vegetation along waterways, gullies, ridgelines and property boundaries.	along the boundaries of the site are being retained.
The impact of any buildings and works on areas of remnant vegetation, and habitat of botanical and zoological significance.	No remnant vegetation on the site. Two medium value trees are proposed to be removed and one street tree.
The impact of proposed buildings and works on the landscape character of the area, including prominent ridgelines and significant views.	The subject site is not on a prominent ridgeline and there are no proposed buildings as part of this application.
Measures to address environmental hazards or constraints including slope, erosion, drainage, salinity and fire.	Connection to sewer mains is the main measure to address any concerns about subdividing close to Deep Creek.
The protection of waterways and water quality through the appropriate management of effluent disposal, erosion and sediment pollution.	The connection of the site to sewer mains will help protect Deep Creek to the west.

Vegetation Protection Overlay – Schedule 1

The vegetation protection objectives to be achieved are:

- *To protect and conserve existing vegetation as an important element of the character of low density residential areas.*
- *To maintain and enhance local habitat and biolinks, including hollow bearing trees.*
- *To avoid and minimise the removal of vegetation where it contributes to the management of environmental hazards such as erosion, salinity, siltation of creeks and watercourses, and stormwater runoff.*
- *To ensure that vegetation remains a significant part of the character and visual amenity of these areas, with the built form being located within a landscape, and vegetation being the predominant feature.*

A permit is required to remove, destroy or lop any vegetation.

Before deciding on an application, in addition to the decision guidelines in Clause 65, the responsible authority must consider, as appropriate:

Decision Guidelines	Response
The Municipal Planning Strategy and the Planning Policy Framework.	See Section 5 of this report.
The statement of the nature and significance of the vegetation to be protected and the vegetation protection objective contained in a schedule to this overlay.	The Ecologist Report prepared by Ecolink, has determined that there is no remnant vegetation on the site. There are planted indigenous and exotic canopy trees throughout the site which is an important element of the landscape character and visual amenity. The removal of nine trees is required for the vehicle access and generous building envelopes.
The effect of the proposed use, building, works or subdivision on the nature and type of vegetation to be protected.	The indicative building envelopes and access to the site results in the removal of nine trees.
The role of native vegetation in conserving flora and fauna.	No remnant vegetation on site.
The need to retain native or other vegetation if it is rare, supports rare species of flora or fauna or forms part of a wildlife corridor.	The ecologist report notes threatened fauna and flora species in the area, but none were observed within the study area.
The need to retain vegetation which prevents or limits adverse effects on ground water recharge.	The vegetation being removed will not impact on ground water recharge.

The need to retain vegetation: *Where ground slopes exceed 20 percent.* *Within 30 metres of a waterway or wetland.* *On land where the soil or subsoil may become unstable if cleared.* *On land subject to or which may contribute to soil erosion, slippage or salinisation.* *In areas where the removal, destruction or lopping of vegetation could adversely affect the integrity or long term preservation of an identified site of scientific, nature conservation or cultural significance.* *Which is of heritage or cultural significance.*	Vegetation is not being removed from any areas listed.
The need to remove, destroy or lop vegetation to create a defendable space to reduce the risk of bushfire to life and property.	Trees 19 and 23 are within 10 meters of the existing house. They are both exempt in accordance with Clause 52.12-1 of the Cardinia Planning Scheme as the building is located in an area that is designated as a bushfire prone area, is within 10 metres of an existing building used for accommodation and the building was constructed before 2009.
Any relevant permit to remove, destroy or lop vegetation in accordance with a land management plan or works program.	Not applicable.
Whether the application includes a land management plan or works program.	No land management plan or works program proposed.
Whether provision is made or is to be made to establish and maintain vegetation elsewhere on the land.	There are sufficient canopy trees throughout the property so there has been no provision to establish more trees. The remaining trees on site are protected by the VPO.
Any other matters specified in a schedule to this overlay.	Not applicable.

6.3. Particular Provisions

Clause 52.17 Native Vegetation

As discussed in the Biodiversity Assessment prepared by Ecolink, there is no remnant vegetation on site. Therefore, this application does not propose to remove any native vegetation

7. Decision Guidelines

Before deciding on an application or approval of a plan, the responsible authority must consider, as appropriate:

7.1. Clause 65.01 Approval of An Application of Plan

Decision Guidelines	Response
The suitability of the land for subdivision.	All matters in Section 60 have been followed at the point in the planning application.
The existing use and possible future development of the land and nearby land.	The likely future use of Lot 2 is Residential. The likely future use of Lot 1 is a Child Care Centre.
The availability of subdivided land in the locality, and the need for the creation of further lots.	The majority of lots in the immediate area are approximately 5,000m^2 in area. There are numerous battleaxe style lots along Pinehill Drive.
The effect of development on the use or development of other land which has a common means of drainage.	The drainage will discharge to Ryan Road without impacting on other lots.
The subdivision pattern having regard to the physical characteristics of the land including existing vegetation.	Nine trees are being removed to facilitate the subdivision, conceptual building envelopes and access. Six of these are low or no value.
The density of the proposed development.	Both lots are greater than 4,000m^2.
The area and dimensions of each lot in the subdivision.	Both lots will be relatively regular in shape and dimensions.
The layout of roads having regard to their function and relationship to existing roads.	No new roads required.
The movement of pedestrians and vehicles throughout the subdivision and the ease of access to all lots.	No public movement of pedestrian and vehicles through the subdivision.
The provision and location of reserves for public open space and other community facilities.	Not applicable.
The staging of the subdivision.	Not applicable.

The design and siting of buildings having regard to safety and the risk of spread of fire.	Indicative building envelopes are shown on the proposed plan of subdivision. Low risk of fire in this location.
The provision of off-street parking.	Both proposed lots will have access to off-street parking.
The provision and location of common property.	Not applicable.
The functions of any owners corporation.	Not applicable.
The availability and provision of utility services, including water, sewerage, drainage, electricity, and, where the subdivision is not a residential subdivision, gas.	All services are available.
If the land is not sewered and no provision has been made for the land to be sewered, the capacity of the land to treat and retain all sewage and sullage within the boundaries of each lot.	Both lots will be connected to sewer.
Whether, in relation to subdivision plans, native vegetation can be protected through subdivision and siting of open space areas.	No native vegetation required to be removed.
The impact the development will have on the current and future development and operation of the transport system.	No impact.

8. Conclusion

As this report demonstrates, the proposal constitutes an appropriate response to the physical context of the subject site and surrounds, supports and implements the applicable strategic directions of the Planning Policy Framework and meets the objectives and requirements of the key statutory controls.

For these reasons, we submit that the responsible authority would be justified in reaching a conclusion that the two lot subdivision is worthy of support and approval.

July 2025

Biodiversity Assessment, 23 Ryan Road, Pakenham, Victoria

Prepared for:

Ryan Road Pakenham Land Pty Ltd

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Cover Photograph

A photograph of the study area.

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Executive Summary

Ecolink Consulting Pty Ltd was engaged by Ryan Road Pakenham Land Pty Ltd to undertake a Biodiversity Assessment at 23 Ryan Road, Pakenham, Victoria (the study area). The Biodiversity Assessment was undertaken to determine the ecological constraints of the study area and to support planning permit applications for the proposed 2-lot subdivision and proposed development of a childcare centre in the east of the property.

The study area is located within the Cardinia Shire municipality. It is zoned Low Density Residential Zone – Schedule 2 (LDRZ2) and is covered by a Vegetation Protection Overlay – Schedule 1 (VPO1). The VPO1 states that the area contains '*substantial areas of remnant indigenous vegetation and mature exotic species. The maintenance and enhancement of the flora habitat is vital for the long term protection of these areas and the native fauna they support'.*

Department of Energy, Environment and Climate Action modelling suggests that the study area occurs within the Gippsland Plain Bioregion and was historically covered by Ecological Vegetation Class (EVC) 83: Swampy Riparian Woodland in the west, and EVC 53: Swamp Scrub in the east. However, the site assessment found that no patches of native vegetation remain within the study area.

Thirty-two flora species were recorded during the assessment (excluding the planted vegetation). Only three indigenous species were recorded: Finger Rush *Juncus subsecundus*, Swamp Paperbark *Melaleuca ericifolia* and Weeping Grass *Microlaena stipoides* var. *stipoides*. The other species were exotic, reflecting the long history of the site as a residential property, surrounded by ornamental gardens and trees to provide a screen to the adjoining roads.

Eleven threatened flora species have been recorded within three kilometres of the study area, however none were observed during the current assessment, and none are likely to be impacted by the proposed works. No threatened ecological communities were recorded during the current assessment.

Six fauna species were recorded within the study area (and its airspace) during the current assessment. All were native birds, which were widespread and common within the local area.

Eleven historical records of threatened fauna species occur within three kilometres of the study area, however none were observed within the study area, during the current assessment. Development of the study area is unlikely to significantly impact local populations of any threatened fauna species (if present).

In this context, and based on the relevant legislation and policies, the following recommendations are made:

- To obtain regulatory approval:
    - Submit this report to Council to support the planning permit application, including to seek a permit for the removal of native vegetation, but noting the absence of any patches of native vegetation or any indigenous scattered trees;
- Post approval, subject to regulatory approvals:

- Engage a zoologist or wildlife handler salvage any wildlife from trees prior to their removal.
- Prepare a Construction Environment Management Plan (or equivalent) which includes:
  - Manages sediment and erosion; and
  - Measures to minimise impacts associated with weed introduction and spread targeting noxious weeds including:
    - Blackberry *Rubus fruticosus* spp agg.;
    - Paterson's Curse *Echium plantagineum*;
    - Soursob *Oxalis pes-caprae;*
    - Spear Thistle *Cirsium vulgare;* and
    - Variegated Thistle *Silybum marianum*.

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Introduction

Ecolink Consulting Pty Ltd was engaged by Ryan Road Pakenham Land Pty Ltd, to undertake a Biodiversity Assessment at 23 Ryan Road, Pakenham (the study area). The Biodiversity Assessment was undertaken to determine the ecological constraints of the study area and to support planning permit applications for the proposed 2-lot subdivision and proposed development of a childcare centre within the study area.

The assessment addresses the requirements of Clause 52.17 of the Cardinia Planning Scheme. Clause 52.17 requires mapping and assessing the location, extent and quality of native vegetation in accordance with the *Guidelines for the Removal, Destruction or Lopping of Native Vegetation* (Department of Environment Land Water and Planning 2017). The Biodiversity Assessment also identifies the likely ecological constraints of the study area and recommends mitigation measures and offset requirements based on other relevant legislation and policies, where appropriate.

Therefore, the purpose of the Biodiversity Assessment and is to:

- Determine the ecological values of the study area;
- Evaluate the extent and quality of native vegetation within the study area, required under the *Guidelines for the Removal, Destruction or Lopping of Native Vegetation* (Department of Environment Land Water and Planning 2017);
- Evaluate any impacts that are likely to occur to any ecological values as a result of the potential loss of vegetation at the study area; and,
- Make recommendations to avoid or mitigate impacts to identified ecological values, as appropriate.

Methods

Desktop Assessment

In order to determine the ecological values that have previously been recorded within the study area, and its vicinity, the following databases and literature were consulted:

- The Commonwealth Department of Climate Change, Energy, the Environment and Water (DCCEEW) Protected Matters Search Tool to determine Matters of National Environmental Significance (MNES), under the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act), that are modelled to occur in the vicinity of the study area (Department of Climate Change Energy the Environment and Water 2025a);
- Planning Maps to identify the planning zones and overlays relating to environmental matters e.g. Vegetation Protection Overlays or Environmental Significance Overlays (Department of Transport and Planning 2025);
- The NatureKit webpage (Department of Environment Land Water and Planning 2023) from the Department of Energy, Environment, and Climate Action (DEECA) to identify the historic and current Ecological Vegetation Classes (EVCs);
- The Victorian Biodiversity Atlas (Department of Energy Environment and Climate Action 2025e) for records of threatened[1] flora and fauna within three kilometres of the study area;
- Nearmap aerial photography to understand previous land use (Nearmap 2025);
- The Native Vegetation Information Management System (NVIM) to determine biodiversity offset requirements (Department of Energy Environment and Climate Action 2025b);
- The 'Weeds of National Significance' database (Department of Climate Change Energy the Environment and Water 2025b); and,
- Other relevant legislation and policies (as required).

Site Assessment

A site assessment was undertaken on 2 July 2025 by Principal Ecologist, Simon Scott. Simon is suitably qualified and experienced to undertake such assessments and holds a current Vegetation Quality Assessments (Habitat Hectares) Accreditation with DEECA (Department of Energy Environment and Climate Action 2025d).

All flora species observed within the study area were recorded, with the exception of planted vegetation that was not considered a 'weed' (i.e. planted vegetation that was not spreading or reproducing). Where a species was not able to be confidently identified in the field, a sample was collected and later identified. Plants were identified to species level wherever possible, however, some plants that were planted, cultivars, hybrids, or plants that did not contain suitable fertile material used for identification were recorded to genus level.

[1] Threatened flora and fauna includes species listed under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999 (Cth)*, and the *Flora and Fauna Guarantee Act 1988 (Vic*).

Vegetation communities such as EVCs and nationally significant vegetation communities were recorded (if observed) and compared with their corresponding benchmarks or thresholds to ensure that they were accurately assigned.

A list of all fauna species observed within, and immediately surrounding, the study area was produced. This list consists of species seen, heard, or identified by other evidence of their presence (e.g. feathers, scats). Leica 12 X 50 binoculars and call mimicry/playback were used to assist in the identification species.

The species, size (Diameter and Breast Height and Tree Protection Zone) and location of all 'scattered' indigenous trees was recorded using an iPad mini tablet that has an internal Global Positioning System (GPS) and the GIS Pro application (accuracy +/- 5 metres). The presence of hollows and birds' nests was also noted.

The presence of fauna habitat was noted, particularly in relation to potential habitats for threatened species. The greatest amount of time was spent surveying the highest quality fauna habitats (e.g. trees, water bodies, crevices or underground debris) during the assessment.

Guidelines for the Removal, Destruction or Lopping of Native Vegetation

The *Guidelines for the Removal, Destruction or Lopping of Native Vegetation* (the Guidelines) (Department of Environment Land Water and Planning 2017) are required to be addressed under Clause 52.17 of the Planning Scheme. The Guidelines require that information regarding the biodiversity values of the site were obtained through:

- Site-based information that was measured or observed at a site, including:
  - Extent of native vegetation patches;
  - Large trees;
  - Native vegetation condition assessed in accordance with the *Vegetation Quality Assessment Manual – Guidelines for Applying the Habitat Hectares Scoring Method* (Department of Sustainability and Environment 2004);
  - Ecological Vegetation Classes (EVC); and
  - Sensitive wetlands and coastal areas.
- Landscape scale information that cannot be measured or observed at the site and includes maps and models procured from DEECA.

The Guidelines require a Habitat Hectare assessment in instances where the impact is to be assessed under the Detailed Assessment Pathway. It was not possible to determine the risk-based pathway for the loss of native vegetation prior to the site assessment, and we therefore opted to complete the Habitat Hectare assessment in accordance with the methodology prescribed within the *Vegetation Quality Assessment Manual – Guidelines for Applying the Habitat Hectares Scoring Method* (Department of Sustainability and Environment 2004) where patches[2] of vegetation were observed.

[2] A 'patch' is defined as an area with at least 25% cover abundance of perennial native vegetation, or a group (i.e. three or more) trees forming a continuous canopy.

All indigenous vegetation was assessed, and then assigned a quality rating based on the Habitat Hectare score (Department of Sustainability and Environment 2004). In addition, the location and species of indigenous 'scattered trees'[3], and any 'large trees'[4] within patches were mapped.

Limitations and Qualifications

The following limitations and qualifications apply to this report:

- The results of the desktop assessment are reliant on data obtained from various databases and other reports. These databases all have internal vetting procedures, however the accuracy of these historical data and some of the results provided within these reports cannot be verified. The desktop assessment does, however, rely on the most accurate data available.
- As with all ecological assessments, a greater survey effort is likely to yield additional flora and fauna records. Where these additional flora and fauna records may alter the recommendations made within this report (e.g. where additional threatened species may utilise habitats within the study area, or where threatened species may be impacted by the proposed development), further assessment has been recommended within this report, depending on the implications of relevant policies and legislation.
- Some flora and fauna species may only be recorded during certain times or seasons (e.g. plants that only contain above-ground biomass and are only visible annually, nocturnal mammals and birds, migratory birds, or fauna identified through seasonal breeding calls such as some frog species).

On the basis of the above, the author has made an informed decision about the likely presence of threatened species that may be present, or that may utilise habitats within the study area, based on a desktop assessment, a review of the species' biology, and an understanding of the ecological values of the local area.

Despite the limitations to the assessment listed above, the results gained by both a desktop and a field-assessment are adequate to address the purposes of this report.

[3] Scattered trees are defined as a native canopy tree that does not form a patch
[4] Large trees are defined as meeting the size threshold specified in the bioregional EVC Benchmark

Results

The Study Area

Study Area Description and Land Use History

The study area is located approximately 2.5 kilometres east of the Pakenham train station. It is also located approximately 220 metres east of the Pakenham Golf Course, and just east of Deep Creek, which flows through the Deep Creek Reserve. immediate neighbours to the study area include low-density residential lots, although higher density residential subdivisions are occurring further east of the study area.

Ryan Road extends along the eastern boundary of the property, which provides access via an existing driveway. A disused dwelling was present in the south-east of the study area, with a large shed further west. Sheep were grazing the study area at the time of the assessment (Plate 1). Trees have been planted in the nature strip along the road frontage, around the property boundaries and alongside the driveway (Plate 2).

The study area does not contain any waterways or waterbodies.

Local Planning Controls

The study area is located within the Cardinia Shire municipality. It is zoned Low Density Residential Zone – Schedule 2 (LDRZ2) and is covered by a Vegetation Protection Overlay – Schedule 1 (VPO1). The VPO1 states that the area contains '*substantial areas of remnant indigenous vegetation and mature exotic species. The maintenance and enhancement of the flora habitat is vital for the long term protection of these areas and the native fauna they support*'(Department of Environment Land Water and Planning 2025).

The objectives of the VPO1 are to:

- Protect and conserve existing vegetation as an important element of the character of low density residential areas;
- Maintain and enhance local habitat and biolinks, including hollow bearing trees;
- Avoid and minimise the removal of vegetation where it contributes to the management of environmental hazards such as erosion, salinity, siltation of creeks and watercourses, and stormwater runoff; and
- Ensure that vegetation remains a significant part of the character and visual amenity of these areas, with the built form being located within a landscape, and vegetation being the predominant feature (Department of Environment Land Water and Planning 2025).

Flora

Flora Communities

The study area is located within the Gippsland Plain bioregion of Victoria. DEECA modelling of the vegetation within the study area suggest it was historically covered by Ecological Vegetation Class

(EVC) 83: Swampy Riparian Woodland in the west, and EVC 53: Swamp Scrub in the east (Department of Energy Environment and Climate Action 2025c).

These EVCs are described as:

- EVC 83: Swampy Riparian Woodland: A '*woodland to 15 metres tall generally occupying low energy streams of the foothills and plains. The lower strata are variously locally dominated by a range of large and medium shrub species on the stream levees in combination with large tussock grasses and sedges in the ground layer'* (Department of Energy Environment and Climate Action 2025a); and
- EVC 53: Swamp Scrub: A '*closed scrub to 8 m tall at low elevations on alluvial deposits along streams or on poorly drained sites with higher nutrient availability. The EVC is dominated by Swamp Paperbark Melaleuca ericifolia (or sometimes Woolly Tea-tree Leptospermum lanigerum) which often forms a dense thicket, out-competing other species. Occasional emergent eucalypts may be present. Where light penetrates to ground level, a moss/lichen/liverwort or herbaceous ground cover is often present. Dry variants have a grassy/herbaceous ground layer*' (Department of Energy Environment and Climate Action 2025a).

Both EVCs have a Conservation Status of Endangered within the bioregion.

Current vegetation modelling, by DEECA, suggests small areas of these EVCs may persist along the eastern boundary or the western boundary of the study area, however, no patches of native vegetation were recorded during the current assessment (as discussed below).

Flora Species

Thirty-two flora species were recorded during the assessment (excluding the planted vegetation) (Table A1). Only three indigenous species were recorded, Finger Rush *Juncus subsecundus*, Swamp Paperbark *Melaleuca ericifolia* and Weeping Grass *Microlaena stipoides* var. *stipoides* (Plate 3).

The study area was dominated by exotic grasses including Kikuyu *Cenchrus clandestinus*, Panic Veldt-grass *Ehrharta erecta*, Cocksfoot *Dactylis glomeratus* and Sweet Vernal-grass *Anthoxanthum odoratum*. Other widespread species included Couch *Cynodon dactylon* var. *dactylon*, Rat-tail Grass *Sporobolus africanus*, White Clover *Trifolium repens* and Ribwort *Plantago lanceolata* (Plate 4).

The midstorey and overstorey contained planted trees and shrubs. These included exotic, Australian native and Victorian native species.

Ornamental planted vegetation is excluded from the assessment (and Table A1), although we noted the widespread occurrences of some Victorian native species including Spotted Gum *Corymbia maculata*, Southern Mahogany *Eucalyptus botryoides* and Giant Honey-myrtle *Melaleuca armillaris* all of which have distribution including East Gippsland (Plate 5) (Royal Botanic Gardens Melbourne 2025).

We are satisfied that all of the trees observed within the study area are planted, and not remnant, on the basis that:

- The trees were exotic, Australian native and Victorian native, but generally not indigenous to the local area and not consistent with the EVCs which would historically have occurred within the study area;
- Many of the trees were of a similar size, and age; and,
- The trees were generally planted around the property boundary in rows, with roughly equidistant spacing.

Vegetation Quality Assessment

No patches of native vegetation were recorded within the study area.

Scattered Tree Assessment

No scattered indigenous trees were recorded within the study area. The indigenous River Red-gum trees observed were deemed to have been planted, and are exempt from requiring a permit for their removal pursuant to Clause 52.17 of the planning scheme (Department of Transport and Planning 2024).

Threatened Flora Species and Ecological Communities

Thirteen threatened flora species have previously been recorded within three kilometres of the study area (Department of Energy Environment and Climate Action 2025e). An additional 13 threatened flora species are predicted to occur within the study area based on the Protected Matters Search Tool (Department of Climate Change Energy the Environment and Water 2025a). A consolidated list of these threatened flora species, as well as their conservation status under the EPBC Act, the *Flora and Fauna Guarantee Act 1988* (Vic) (FFG Act) Threatened List (Department of Energy Environment and Climate Action 2024), their preferred habitats and the likelihood of occurrence for each species is provided in Table A3.

No threatened flora species have previously been recorded within the study area, and none were recorded during the current assessment. Given the land use history and modification of the vegetation observed within the study area, no threatened flora species are likely to occur within the study area.

The modelling used by the Protected Matters Search Tool suggests that up to two nationally significant vegetation communities may also occur within the study area:

- Natural Damp Grassland of the Victorian Coastal Plains (Critically Endangered); and,
- White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland (Critically Endangered).

The vegetation within the study area is not representative of these threatened ecological communities, based on its topography, EVC classification and the observed species mix and weediness.

Fauna

Fauna Species and Habitats

Six fauna species were recorded within the study area (and its airspace) during the current assessment. All were native birds. It is expected that a greater diversity of fauna species would be recorded with a greater amount of time on-site.

All of these species are common to the area. No mammals, reptiles of frogs were during the assessment. It is likely that skinks and snakes would occur within the study area, amongst areas containing understorey vegetation and organic litter or debris. No dams or waterbodies were present within the study area and there was no suitable habitat for frogs, fish or waterbirds.

The open and gardens and paddock area provide habitat to generalist species, such as Australian Magpie *Gymnorhina tibicen,* Magpie-lark *Grallina cyanoleuca* and Australian Raven *Corvus coronoides*, which are widespread and common species throughout farmland and open paddocks within this part of Victoria. Willie Wagtails *Rhipidura leucophrys* and Red Wattlebirds *Anthochaera carunculata* were foraging on blooming plants and trees.

The trees provide nesting opportunities for birds and roost habitats for bats. It is probable that arboreal mammals such as Common Ringtail Possum *Pseudocheirus peregrinus*, and bats also utilise the trees. The trees lacked hollows which may provide roosting habitats for Common Brushtail Possum *Trichosurus vulpecula* or hollow-dependent nesting birds such as cockatoos and owls.

Threatened Fauna Species and Communities

Eleven threatened fauna species have previously been recorded within three kilometres of the study area (Department of Energy Environment and Climate Action 2025e) (Figure 2). An additional 31 threatened fauna species are predicted to occur within the study area, based on the Protected Matters Search Tool (Department of Climate Change Energy the Environment and Water 2025a). A consolidated list of these threatened fauna species, as well as their conservation status under the EPBC Act and the FFG Act Threatened List (Department of Energy Environment and Climate Action 2024), their preferred habitats and the likelihood of occurrence for each species is provided in Table A4.

There are no historical records of threatened fauna species within the study area, and no threatened fauna species were recorded within the study area during the current assessment (Table A4, Figure 2).

Of the species modelled to occur, the study area may provide occasional or opportunistic habitats for Gang-gang Cockatoo *Callocephalon fimbriatum* and Grey-headed Flying-fox *Pteropus poliocephalus*. White-throated Needletails *Hirundapus caudacutus* may fly over the study area on occasion. Given the large home ranges, the mobile nature of these species, and the abundance of similar habitats within the landscape, the development of the study area is unlikely to significantly impact local populations (if present).

No fauna communities listed under the Victorian FFG Act were recorded within the study area.

Discussion

A detailed summary of the legislation that was considered when preparing this report is provided in Appendix 2. The discussion presented in this section of the report does not reiterate information provided in Appendix 2, but summarises the results and recommendations arising from the interpretation of this legislation.

Environment Protection and Biodiversity Conservation Act 1999 (Cth)

The desktop assessment identified 14 threatened flora and 35 threatened fauna species, as well as up to two threatened ecological communities, listed under the EPBC Act, which may occur within the study area.

Almost all of the EPBC Act-listed flora and fauna species that were identified during the desktop assessment, are, in fact, unlikely to occur due to the absence of suitable habitats or the degraded nature of habitats within the study area. There is the potential for some EPBC Act-listed birds or bats may opportunistically visit the study area including Gang-gang Cockatoo, Grey-headed Flying-foxes and White-throated Needletails. However, the proposed development is unlikely to significantly impact any of these species.

The limited and degraded native vegetation within the study area does not meet thresholds to classify as any of the threatened ecological communities listed under the EPBC Act.

A referral to the Commonwealth DCCEEW is not recommended for the project.

Flora and Fauna Guarantee Act 1988 (Vic)

The desktop assessment identified 26 flora species and 42 fauna species listed under the FFG Act that may occur within the study area (Tables A3 and A4). As stated above, there is a low to moderate likelihood that some FFG Act-listed fauna, with large home ranges, may utilise or fly over the study area on occasion (White-throated Needletail, Gang-Gang Cockatoo and Grey-headed Flying-fox). However, the development of the study area is unlikely to significantly impact any of these threatened species.

The FFG Act, which was amended in 2021, contains an obligation or duty on public authorities and ministers to consider potential biodiversity impacts when exercising their functions. The FFG Act requires ministers and public authorities (including Councils) reasonably consider the objectives of the Act where projects may impact upon biodiversity, so far as is consistent with the proper exercising of their functions. It is therefore anticipated that regulators (DEECA and Cardinia Council) will give due consideration to the FFG Act when considering the approval for the project.

The FFG Act also lists species as 'protected flora' on public land. Protected flora includes whole families or genera, (as well as species), such as daisies, heaths, orchids, and most Acacias. These species and genera are not necessarily regarded as threatened but require an approved *Permit to Take Protected Flora* from DEECA prior to their removal when located on public land (including road reserves). The study area is located on private land, and the proposed entrance will include a nature

strip which is highly modified, unlikely to contain any threatened r protected flora species. Therefore, a *Permit to Take Protected Flora* is not required.

Planning and Environment Act 1987 (Vic)

The proposed development would require a planning permit from the Cardinia Shire Council under Clause 52.17 prior to the removal, destruction or lopping of native vegetation (Department of Environment Land Water and Planning 2025). The applicant is required to demonstrate how it applied the three-step approach to avoid, minimise and offset impacts to native vegetation (discussed below).

The objectives of the VPO1 generally requires that a planning permit application for development within the study area avoid impacts to remnant native vegetation, to protect the flora and fauna habitats as well as the visual amenity of the area. Whilst the study area does not support any patches of native vegetation or scattered trees, the retention of some vegetation to address the VPO1 objectives is also discussed below.

Catchment and Land Protection Act 1994 (Vic)

Primary considerations of the *Catchment and Land Protection Act 1994* (Vic) relate to soil and water conservation, as well as the management of pest plants and animals.

The study area contains a very low cover abundance of environmental weed species. However, five species listed as 'noxious' within the Melbourne Water Catchment Management Area were present within the study area (Table A1, Appendix 1). These weeds included:

- Blackberry *Rubus fruticosus* spp. agg., Paterson's Curse *Echium plantagineum*, Spear Thistle *Cirsium vulgare* and Variegated Thistle *Silybum marianum* which are all listed as 'Regionally Controlled' within the catchment. The proponent is required to 'control the spread' of all 'regionally controlled' species from their property; and
- Soursob *Oxalis pes-caprae* which is listed as 'Restricted'. There are restrictions on the 'trade' of the species.

Blackberry is also listed as 'Weeds of National Significance', although there are no additional legislative obligations to manage weeds under this listing.

Given the low cover abundance of weeds, ongoing weed management would be straightforward. There is the potential for construction works, and associated machinery, to introduce additional weeds into the study area. It is recommended the proposed development includes a weed management program as part of any Construction Environment Management Plan (or equivalent).

In addition, it is recommended that the development avoid impacts to the land to the west, which includes Deep Creek, by mitigating off-site impacts. This should be prescribed through erosion and sediment control measures within the above-mentioned Construction Environment Management Plan.

Wildlife Act 1975 (Vic)

It is likely that some locally common species of fauna will be displaced by the proposed development. Furthermore, there remains a low likelihood that animals may be accidentally injured when disturbing soil and removing vegetation. All native vertebrate wildlife is protected under the *Wildlife Act 1975* (Vic), and therefore contractors must use due care when removing vegetation and fill from the study area. It is recommended that a zoologist or wildlife handler salvage any wildlife from trees prior to their removal (if required).

Guidelines for the Removal, Destruction or Lopping of Native Vegetation

The Three-step Approach

Applicants who wish to remove native vegetation must generally demonstrate how the application meets the three-step approach to:

1. Avoid the removal, destruction or lopping of native vegetation;
2. Minimise impacts from the removal, destruction or lopping of native vegetation that cannot be avoided; and
3. Provide an offset to compensate for the biodiversity impact from the removal, destruction or lopping of native vegetation (Department of Environment Land Water and Planning 2017).

Avoidance and Minimisation Statement

Avoidance of native vegetation is generally demonstrated through appropriate development design. However, no patches of native vegetation, or scattered trees, were recorded within the study area.

That stated, the trees provide habitat to local fauna, and retention of vegetation is consistent with the objectives of the VPO1. Where practicable, it is recommended that impacts to biodiversity values be minimised, by:

- Retaining mature trees where practicable;
- Incorporating sediment, erosion and pollution control measures, in accordance with the EPA Guidelines (EPA Victoria 1991; EPA Victoria 1996), in a Construction Environment Management Plan, to ensure future residents avoid indirect impacts to downstream/downhill areas of greater ecological significance (such as Deep Creek); and,
- Avoiding the use of environmental weeds during the landscaping of the property.

Offsets

No offsets are required for the loss of native vegetation within the study area due to an absence of patches of native vegetation and scattered trees.

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Plates

Plate 1. Sheep grazing the study area, recently fed some hay (2 July 2025).

Plate 2. Trees planted within the nature strip along Ryan Road (2 July 2025).

Plate 3. Some Finger Rush tussocks and isolated occurrences of Weeping Grass amongst other exotic grasses near the southern boundary of the study area (2 July 2025).

Plate 4. Exotic grasses dominate the study area. Nettle was less grazed by the sheep (2 July 2025).

Plate 5. Victorian native Ginat Honey-myrtles planted along the northern boundary of the study area (2 July 2025).

Figures

PAKENHAM

RYAN ROAD

0 10 20 30 40 Meters

Figure 1: Results of the current assessment.

23 Ryans Road, Pakenham, Victoria

Legend

Study Area

ecolink consulting

Note: some threatened species points have been shifted for display purposes

0 500 1,000 1,500 2,000 Meters

Figure 2: Threatened flora and fauna within 3kms of the study area.

23 Ryans Road, Pakenham, Victoria

Legend

- Study Area
- 3km Study Area Buffer

Common Name

- Australasian Bittern
- Blue-billed Duck
- Eastern Great Egret
- Latham's Snipe
- White-bellied Sea-Eagle
- Southern Brown Bandicoot
- Growling Grass Frog
- Southern Toadlet
- Macquarie Perch
- Murray Cod
- Foothill Burrowing Crayfish
- Austral Crane's-bill
- Bog Gum
- Buxton Gum
- Cobra Greenhood
- Giant Honey-myrtle
- Green Scentbark
- Grey Billy-buttons
- Maroon Leek-orchid
- Matted Flax-lily
- Purple Blown-grass
- Southern Blue-gum
- Spotted Gum
- Veined Spear-grass

Appendices

Appendix 1. Flora and Fauna Tables

Table A1. Flora species recorded within the study area

Origin	Common Name	Scientific Name	Weeds of National Significance	Noxious Weeds Classification
*	Annual Meadow-grass	*Poa annua*	-	-
*	Bird's-foot Trefoil	*Lotus corniculatus*	-	-
*	Black Nightshade	*Solanum nigrum*	-	-
*	Blackberry	*Rubus fruticosus* spp. agg.	Yes	Controlled
*	Brown-top Bent	*Agrostis capillaris*	-	-
*	Buck's-horn Plantain	*Plantago coronopus*	-	-
*	Cape Weed	*Arctotheca calendula*	-	-
*	Cocksfoot	*Dactylis glomerata*	-	-
*	Common Centaury	*Centaurium erythraea*	-	-
*	Couch	*Cynodon dactylon* var. *dactylon*	-	-
*	Drain Flat-sedge	*Cyperus eragrostis*	-	-
*	Flatweed	*Hypochaeris radicata*	-	-
*	Hairy Bird's-foot Trefoil	*Lotus subbiflorus*	-	-
*	Kikuyu	*Cenchrus clandestinus*	-	-
*	Nettle	*Urtica urens*	-	-
*	Onion Grass	*Romulea rosea*	-	-
*	Panic Veldt-grass	*Ehrharta erecta*	-	-
*	Paspalum	*Paspalum dilatatum*	-	-
*	Paterson's Curse	*Echium plantagineum*	-	Controlled
*	Pimpernel	*Lysimachia arvensis*	-	-
*	Rat-tail Grass	*Sporobolus africanus*	-	-
*	Ribwort	*Plantago lanceolata*	-	-
*	Small-flower Mallow	*Malva parviflora*	-	-
*	Soursob	*Oxalis pes-caprae*	-	Restricted
*	Spear Thistle	*Cirsium vulgare*	-	Controlled
	Swamp Paperbark	*Melaleuca ericifolia*	-	-
*	Sweet Vernal-grass	*Anthoxanthum odoratum*	-	-
*	Variegated Thistle	*Silybum marianum*	-	Controlled
	Weeping Grass	*Microlaena stipoides* var. *stipoides*	-	-
*	White Arum-lily	*Zantedeschia aethiopica*	-	-
*	White Clover	*Trifolium repens* var. *repens*	-	-

Origin	Common Name	Scientific Name	Weeds of National Significance	Noxious Weeds Classification
*	Yorkshire Fog	*Holcus lanatus*	-	-

Table Notes:

* – Exotic # – naturalised

This table does not include ornamental plants, trees or shrubs that were not spreading or reproducing beyond where they were planted.

Table A2. Fauna species recorded within the study area

Origin	Common Name	Species Name
Birds		
	Australian Magpie	*Cracticus tibicen*
	Australian Raven	*Corvus coronoides*
	Magpie-lark	*Grallina cyanoleuca*
	Red Wattlebird	*Anthochaera carunculata*
	Red-rumped Parrot	*Psephotus haematonotus*
	Willie Wagtail	*Rhipidura leucophrys*

Definitions

* - Introduced species

Table A3. Threatened flora species that have previously been recorded within, or within three kilometres of the study area (Department of Energy Environment and Climate Action 2025e), or that has habitat that may occur within the vicinity of the study area (Department of Climate Change Energy the Environment and Water 2025a).

Common Name	Species Name	EPBC Act Status	FFG Act Status	Habitat Preferences	Most Recent Record	Habitat Present on Site	Likelihood of Presence*
Austral Crane's-bill	*Geranium solanderi* var. *solanderi*	-	Endangered	Damp to dryish, usually sheltered sites, in grassy woodlands, often along drainage lines or in seepage areas.	2002 (3)	No	Unlikely
Austral Toad-flax	*Thesium australe*	Vulnerable	Endangered	A semi-parasitic on roots of a range of grass species, notably Kangaroo Grass.	NPR	No	Unlikely
Bog Gum	*Eucalyptus kitsoniana*	-	Critically Endangered	Coastal lowlands from Yarram west to Cape Otway, and Mt Richmond near Portland	2024 (1)	No	Unlikely
Buxton Gum	*Eucalyptus crenulata*	Endangered	Endangered	Periodically swampy flats near Buxton	2007 (1)	No	Unlikely
Clover Glycine	*Glycine latrobeana*	Vulnerable	Vulnerable	Grassy woodland; plains grassland; box woodland; dry sclerophyll forest.	NPR	No	Unlikely
Cobra Greenhood	*Pterostylis grandiflora*	-	Endangered	Valley sclerophyll forest, grassy low open forest	1946 (2)	No	Unlikely

Common Name	Scientific Name	EPBC Act Status	FFG Act Status	Habitat Preferences	Most Recent Record	Habitat Present on Site	Likelihood of Presence*
Dense Leek-orchid	*Prasophyllum spicatum*	Vulnerable	Critically Endangered	Coastal and hinterland heath and heathy woodland	NPR	No	Unlikely
Giant Honey-myrtle	*Melaleuca armillaris* subsp. *armillaris*	-	Endangered	Mainly confined to near-coastal sandy heaths, scrubs slightly raised above saltmarsh, riparian scrubs, rocky coastlines and foothill outcrops eastwards from about Marlo. Occurrences to the west are naturalised.	2024 (4)	No	Unlikely
Green Scentbark	*Eucalyptus fulgens*	-	Endangered	Damp sclerophyll forests	2021 (8)	No	Unlikely
Green-striped Greenhood	*Pterostylis chlorogramma*	Vulnerable	Endangered	Open forest and woodland	NPR	No	Unlikely
Grey Billy-buttons	*Craspedia canens*	-	Critically Endangered	Known only from grassland, often bordering swamps, at low altitude between, approximately, Cranbourne and Traralgon.	2001 (1)	No	Unlikely
Leafy Greenhood	*Pterostylis cucullata*	Vulnerable	-	Tea-tree heath	NPR	No	Unlikely
Matted Flax-lily	*Dianella amoena*	Endangered	Critically Endangered	Grassy Wetland; Red Gum woodland; plains grassland; grassy woodlands.	2020 (10)	No	Unlikely

Common Name	Species Name	EPBC Act Status	FFG Act Status	Habitat Preferences	Most Recent Record	Habitat Present on Site	Likelihood of Presence*
Purple Blown-grass	*Lachnagrostis semibarbata* var. *semibarbata*	-	Endangered	Scattered from near Melbourne to the South Australian border, mainly in grassland, occasionally woodland communities in somewhat saline depressions of the volcanic plain, but also known from seasonal, slightly brackish swampy sites east of Melbourne.	2002 (1)	No	Unlikely
River Swamp Wallaby-grass	*Amphibromus fluitans*	Vulnerable	-	Beside swamps in grassy low open forest, riparian scrub. Required moist soils, tolerates inundation.	NPR	No	Unlikely
Round-leaf Pomaderris	*Pomaderris vacciniifolia*	Critically Endangered	Critically Endangered	Valley sclerophyll forest	NPR	No	Unlikely
Shelford Leek-orchid	*Prasophyllum fosteri*	-	Critically Endangered	Basalt plains grassland near Mt Mercer.	2005 (19)	No	Unlikely
Southern Blue-gum	*Eucalyptus globulus* subsp. *globulus*	-	Endangered	Two populations; one south of the Strzelecki Range and the other south of the Otway Ranges.	2004 (1)	No	Unlikely
Spiny Peppercress	*Lepidium aschersonii*	Vulnerable	Endangered	Heavy clay soil near salt lakes on volcanic plain, but with outlying	NPR	No	Unlikely

Common Name	Species Name	EPBC Act Status	FFG Act Status	Habitat Preferences	Most Recent Record	Habitat Present on Site	Likelihood of Presence*
				records from near Lake Omeo and the Grampians			
Spotted Gum	*Corymbia maculata*	-	Vulnerable	Indigenous to the Tara Range, south of Buchan, but also widely used as a street tree	2017 (2)	No	Unlikely
Strzelecki Gum	*Eucalyptus strzeleckii*	Vulnerable	Critically Endangered	Fragmented populations in the Strzelecki Ranges, on a range of sites including ridges, slopes and along the banks of streams, but particularly foothills and flats	NPR	No	Unlikely
Swamp Everlasting	*Xerochrysum palustre*	Vulnerable	Critically Endangered	Seasonal or permanent wetlands	NPR	No	Unlikely
Swamp Fireweed	*Senecio psilocarpus*	Vulnerable	-	High-quality herb-rich wetlands on plains	NPR	No	Unlikely
Thick-lip Spider-orchid	*Caladenia tessellata*	Vulnerable	-	Grassy sclerophyll woodland on clay loam or sandy soils	NPR	No	Unlikely
Veined Spear-grass	*Austrostipa rudis* subsp. *australis*	-	Endangered	Grassy low open forest, dry sclerophyll forests	2001 (1)	No	Unlikely
White Star-bush	*Asterolasia asteriscophora* subsp. *albiflora*	-	Critically Endangered	Moist well drained clay soils in open forests in the foothills	NPR	No	Unlikely

Table Notes:

NPR – Not previously recorded

*** Likelihood of Presence Definitions**:

Unlikely – Site does not contain habitat and/or it is outside the species' known, current distribution.

Low –Site contains some marginal habitat, but the species was not observed and has not been recently recorded in previous surveys in the area.

Moderate – Site contains preferred habitat that may support a population of the species. However, other factors, such as fragmentation, disturbance or predators may be impacting any local population.

High - Site contains the preferred habitat which is likely to support the species.

Present – Preferred habitat is present on the site, and the species was observed on the site, or recently recorded at the site.

Table A4. Threatened fauna species that have previously been recorded within, or within three kilometres of the study site (Department of Climate Change Energy the Environment and Water 2025e), or that has habitat that may occur within the vicinity of the site (Department of Climate Change Energy the Environment and Water 2025a).

Common Name	Species Name	EPBC Act Status	FFG Act Status	Habitat Preferences	Most Recent Record	Habitat Present on Site	Likelihood of Presence*
Birds							
Blue-billed Duck	*Oxyura australis*	-	Vulnerable	Well-vegetated freshwater swamps, large dams, lakes. More open waters in winter.	2019 (4)	No	Unlikely
White-throated Needletail	*Hirundapus caudacutus*	Vulnerable	Vulnerable	Aerial insectivore that rarely lands to perch, often sleeping on the wing	NPR	Yes	Low
Greater Sand Plover	*Charadrius leschenaultii*	Vulnerable	Vulnerable	Tidal mudflats and sandflats, beaches, saltmarsh, estuaries	NPR	No	Unlikely
Australian Painted-snipe	*Rostratula australis*	Endangered	Critically Endangered	Uncommon summer migrant to Victoria. Lowlands on shallow freshwater swamps with emergent vegetation, and flooded salt marshes.	NPR	No	Unlikely
Plains-wanderer	*Pedionomus torquatus*	Critically Endangered	Critically Endangered	Sparse, treeless, lightly grazed native grasslands/herbfields with bare ground, old cereal crops, low shrubland.	NPR	No	Unlikely
Eastern Curlew	*Numenius madagascariensis*	Critically Endangered	Critically Endangered	Estuaries, tidal mudflats, mangroves, shallow river margins, coastal or inland	NPR	No	Unlikely
Curlew Sandpiper	*Calidris ferruginea*	Critically Endangered	Critically Endangered	Estuaries, tidal mudflats, mangroves, shallow river margins, coastal or inland	NPR	No	Unlikely
Sharp-tailed Sandpiper	*Calidris acuminata*	Vulnerable	-	Not threatened	NPR	No	Unlikely
Latham's Snipe	*Gallinago hardwickii*	Vulnerable	-	Wet grasslands, open and wooded swamps.	2019 (4)	No	Unlikely
Australasian Bittern	*Botaurus poiciloptilus*	Endangered	Critically Endangered	Reed beds, dense vegetation of freshwater swamps and creeks.	2017 (1)	No	Unlikely

Common Name	Species Name	EPBC Act Status	FFG Act Status	Habitat Preferences	Most Recent Record	Habitat Present on Site	Likelihood of Presence*
Eastern Great Egret	*Ardea alba modesta*	-	Vulnerable	Floodwaters, rivers and shallows of wetlands, intertidal mud flats.	2019 (2)	No	Unlikely
White-bellied Sea-Eagle	*Haliaeetus leucogaster*	-	Endangered	Oceanic / coastal and larger inland waterways.	2021 (1)	No	Unlikely
Grey Falcon	*Falco hypoleucos*	-	Vulnerable	Shrubland, grassland and wooded watercourses of arid and semi-arid regions, although it is occasionally found in open woodlands near the coast	NPR	No	Unlikely
Gang-gang Cockatoo	*Callocephalon fimbriatum*	Endangered	Endangered	They inhabit cool, wet forests, particularly alpine bushland, but may visit urban parks and gardens to feed	NPR	Yes	Low
Swift Parrot	*Lathamus discolor*	Critically Endangered	Critically Endangered	Winter migrant from Tasmania. Generally prefers Box-Ironbark forests and woodlands inland of the Great Dividing Range during winter.	NPR	No	Unlikely
Blue-winged Parrot	*Neophema chrysostoma*	Vulnerable	-	A range of habitats from coastal, sub-coastal and inland areas, right through to semi-arid zones	NPR	No	Unlikely
Brown Treecreeper	*Climacteris picumnus*	Vulnerable	-	Dry woodland; forest clearings, eucalypts along streams.	NPR	No	Unlikely
Painted Honeyeater	*Grantiella picta*	Vulnerable	Vulnerable	Open box-ironbark forests and woodlands, particularly where trees are infested with mistletoe.	NPR	No	Unlikely
Regent Honeyeater	*Anthochaera phrygia*	Critically Endangered	Critically Endangered	Depends on nectar and insects from Box-Ironbark Eucalypt forests. Only breeding habitat lies in Northeast Victoria and central coast of NSW	NPR	No	Unlikely

Common Name	Species Name	EPBC Act Status	FFG Act Status	Habitat Preferences	Most Recent Record	Habitat Present on Site	Likelihood of Presence*
Pilotbird	*Pycnoptilus floccosus*	Vulnerable	Vulnerable	Temperate wet sclerophyll forests and occasionally temperate rainforest, where there is dense undergrowth with abundant debris	NPR	No	Unlikely
Hooded Robin	*Melanodryas cucullata*	Endangered	Vulnerable	Lightly timbered woodland, mainly dominated by acacia and/or eucalypts.	NPR	No	Unlikely
Diamond Firetail	*Stagonopleura guttata*	Vulnerable	Vulnerable	Open grassy woodland, heath and farmland or grassland with scattered trees.	NPR	No	Unlikely
Mammals							
Spot-tailed Quoll	*Dasyurus maculatus maculatus*	Endangered	Endangered	Forests including large intact areas of vegetation for foraging.	NPR	No	Unlikely
Swamp Antechinus	*Antechinus minimus maritimus*	Vulnerable	Vulnerable	Heathy forest, wetlands, heathland and coastal scrub.	NPR	No	Unlikely
Southern Brown Bandicoot	*Isoodon obesulus obesulus*	Endangered	Endangered	Heathy forest, heathland and coastal scrub.	2013 (2)	No	Unlikely
Southern Greater Glider	*Petauroides volans*	Vulnerable	Endangered	Wet sclerophyll forests, requires large tree hollows for nesting	NPR	No	Unlikely
Yellow-bellied Glider	*Petaurus australis*	Vulnerable	Vulnerable	Occur in tall mature eucalypt forest generally in areas with high rainfall and nutrient rich soils	NPR	No	Unlikely
Long-nosed Potoroo	*Potorous tridactylus trisulcatus*	Vulnerable	Critically Endangered	Heathy woodland	NPR	No	Unlikely
Broad-toothed Rat	*Mastacomys fuscus mordicus*	Endangered	Vulnerable	A range of habitats from sub-alpine to coastal heathland, with high vegetative coverage in high rainfall areas	NPR	No	Unlikely

Common Name	Species Name	EPBC Act Status	FFG Act Status	Habitat Preferences	Most Recent Record	Habitat Present on Site	Likelihood of Presence*
New Holland Mouse	*Pseudomys novaehollandiae*	Vulnerable	Endangered	Heathlands, woodlands with a heathy understorey, open forest and vegetated sand dunes - in areas with soft, deep sandy soil in which to make burrows.	NPR	No	Unlikely
Smoky Mouse	*Pseudomys fumeus*	Endangered	Endangered	Dry sclerophyll forests with tussocky understorey	NPR	No	Unlikely
Grey-headed Flying-fox	*Pteropus poliocephalus*	Vulnerable	Vulnerable	Roost sites commonly occur in gullies, in vegetation with dense canopy cover and close to water.	NPR	Yes	Low
Frogs							
Southern Toadlet	*Pseudophryne semimarmorata*	-	Endangered	Dry forest, woodland, grassland and heath in moist soaks and depressions; uses leaf litter for shelter.	2006 (26)	No	Unlikely
Growling Grass Frog	*Litoria raniformis*	Vulnerable	Vulnerable	Permanent lakes, swamps, dams and lagoons.	2005 (116)	No	Unlikely
Reptiles							
Swamp Skink	*Lissolepis coventryi*	-	Endangered	Low lying wetlands including swamp margins, tea tree thickets.	NPR	No	Unlikely
Fish							
Australian Grayling	*Prototroctes maraena*	Vulnerable	Endangered	Clear gravelly streams; deep slow flowing pools.	NPR	No	Unlikely
Dwarf Galaxias	*Galaxiella pusilla*	Vulnerable	Endangered	Slow moving waters, including ephemeral drains.	NPR	No	Unlikely
Macquarie Perch	*Macquaria australasica*	Endangered	Endangered	Deep, rocky holes with considerable cover and flowing water over unsilted cobble and gravel substrate.	1970 (1)	No	Unlikely

Common Name	Species Name	EPBC Act Status	FFG Act Status	Habitat Preferences	Most Recent Record	Habitat Present on Site	Likelihood of Presence*
Murray Cod	*Maccullochella peelii*	Vulnerable	Endangered	Small clear, rocky, upland streams with riffle and pool structure on the upper western slopes of the Great Dividing Range to large, meandering, slow-flowing, often silty rivers in the alluvial lowland reaches of the Murray-Darling Basin.	1960 (1)	No	Unlikely
Yarra Pygmy Perch	*Nannoperca obscura*	Endangered	Vulnerable	Slow flowing creeks or still lakes with abundant aquatic vegetation and log snags	NPR	No	Unlikely
Invertebrates							
Foothill Burrowing Crayfish	*Engaeus victoriensis*	-	Endangered	Burrows in grey, clay-dominated soils in wet sclerophyll forest at the foot of the Dandenong Ranges	1911 (1)	No	Unlikely
Golden Sun Moth	*Synemon plana*	Vulnerable	Vulnerable	Tussock grasslands preferably dominated by Wallaby Grasses and Spear Grasses.	NPR	No	Unlikely

Table Notes:

This table excludes species listed exclusively as 'migratory' or 'marine' under the EPBC Protected Matters Search results.

*** Likelihood of Presence Definitions:**

Unlikely – Site does not contain habitat and/or it is outside the species' known, current distribution. Birds and bats may fly over.

Low –Site contains some marginal habitat, but the species was not observed and has not been recorded in previous recent surveys in the area. Birds and bats may fly over.

Moderate – Site contains preferred habitat that may support a population of the species. Birds and bats may opportunistically or seasonally forage at the site.

High – Site contains preferred habitat which is likely to support the species. Birds and bats are likely to regularly (at least seasonally) forage or roost at the site.

Present – Preferred habitat is present on the site, and the species was observed on the site, or recently recorded on the site.

NPR– No previous record, modelled presence only under the EPBC Protected Matters Search results.

Appendix 2. Legislation

Commonwealth Legislation

***Environment Protection and Biodiversity Conservation Act 1999* (Cth)**

The *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act) is to provide for the conservation of 'Matters of National Environmental Significance'. The Act defines eight Matters of National Environmental Significance:

- World Heritage properties;
- National Heritage Places;
- Ramsar wetlands of international significance;
- Nationally listed threatened species and ecological communities;
- Listed migratory species;
- Commonwealth marine areas;
- The Great Barrier Reef Marine Park; and,
- Nuclear actions.

Under the Act, actions that are likely to have a significant impact upon Matters of National Environmental Significance require approval from the Federal Environment Minister. This approval is sought through a referral process for a particular action. An action includes any project, development, undertaking, activity or series of activities. Consideration of the requirement for an 'EPBC Referral' to the Minister has been made within this report.

State Legislation

Environmental Effects Act

The *Environment Effects Act 1978* (Vic) provides for assessment of proposed projects (works) that are capable of having a significant effect on the environment. The Act does this by enabling the Minister administering the Environment Effects Act to decide that an Environment Effects Statement (EES) should be prepared.

The Minister might typically require a proponent to prepare an EES when:

- There is a likelihood of regionally or State significant adverse effects on the environment;
- There is a need for integrated assessment of potential environmental effects (including economic and social effects) of a project and relevant alternatives; and,
- Normal statutory processes would not provide a sufficiently comprehensive, integrated and transparent assessment (Department of Sustainability and Environment 2007).

Referral criteria: individual potential environmental effects

- Individual types of potential effects on the environment that might be of regional or State significance, and therefore warrant referral of a project, are:
- Potential clearing of 10 ha or more of native vegetation from an area that:
    - is of an Ecological Vegetation Class identified endangered by the Department of Sustainability and Environment (in accordance with Appendix 2 of Victoria's Native Vegetation Management Framework); or

    - is, or is likely to be, of very high conservation significance (as defined in accordance with Appendix 3 of Victoria's Native Vegetation Management Framework); and
    - is not authorised under an approved Forest Management Plan or Fire Protection Plan
- Potential long-term loss of a significant proportion (e.g. 1 to 5 percent depending on the conservation status of the species) of known remaining habitat or population of a threatened species within Victoria;
- Potential long-term change to the ecological character of a wetland listed under the Ramsar Convention or in 'A Directory of Important Wetlands in Australia';
- Potential extensive or major effects on the health or biodiversity of aquatic, estuarine or marine ecosystems, over the long term;
- Potential extensive or major effects on the health, safety or well-being of a human community, due to emissions to air or water or chemical hazards or displacement of residences; and,
- Potential greenhouse gas emissions exceeding 200,000 tonnes of carbon dioxide equivalent per annum, directly attributable to the operation of the facility (Department of Sustainability and Environment 2007).

***Flora and Fauna Guarantee Act 1988* (Vic)**

The *Flora and Fauna Guarantee Act 1998* (Vic) (FFG Act) provides a legal framework for enabling and promoting the conservation of all Victoria's native flora and fauna, and to enable management of potentially threatening processes on public land. The Act lists native species, communities, and processes that threaten native flora and fauna, under Schedules of the Act. This enables the assessor and regulators to establish management measures to mitigate impacts on listed values within Victoria.

The FFG Act was amended in 2021 and now contains an obligation or duty on public authorities and ministers to consider potential biodiversity impacts when exercising their functions. The FFG Act requires ministers and public authorities (including Councils) reasonably consider the objectives of the Act where projects may impact upon biodiversity, so far as is consistent with the proper exercising of their functions.

The types of potential impacts on biodiversity that should be considered include:

- Long and short term impacts;
- Detrimental and beneficial impacts;
- Direct and indirect impacts;
- Cumulative impacts; and,
- Potentially threatening processes (Department of Environment Land Water and Planning 2021).

It is therefore anticipated that regulators will give due consideration to the FFG Act when considering the approval for the project.

In additional, a 'Permit to Take Protected Flora' is required to 'take' listed flora species that are members of listed communities or protected flora from public land. 'Taking' flora is defined as any action which results in the removal or death of a native plant. A permit is not required under the FFG

Act for private land, unless listed species are present and the land is declared 'critical habitat' for the species. On public land the permit is issued by DEECA.

An evaluation of the likelihood of the presence of significant flora and fauna species on the subject site, including those listed under the FFG Act that have previously been recorded in the vicinity of the site, has been undertaken.

***Planning and Environment Act 1987* (Vic)**

The *Planning and Environment Act 1987* (Vic) (P&E Act), later amended by the *Planning and Environment (Planning Schemes) Act 1996* (Vic) provides the foundation of planning schemes in Victoria. Planning schemes set out policies and provisions for the development and protection of land within each municipality in Victoria.

The *Planning and Environment (Planning Schemes) Act 1996* provides for the Minister for Planning to prepare a set of standard provisions for planning schemes called the Victoria Planning Provisions (VPP). The VPP is a state-wide reference document or template from which planning schemes are sourced and constructed. Incorporation of references such as the *Guidelines for the Removal Destruction or Lopping of Native Vegetation* into Section 12 of the VPP ensures that all municipalities must consider this policy. Local zones and overlays, such as Environmental Significance Overlays, may be incorporated into Section 30 and 40 of the planning provisions by each Council, but only remain relevant within that municipality.

The objectives of the P&E Act are to integrate local land use, development planning and development policy with environmental, social, economic, conservation and resource management policies at State, regional and municipal levels through a set of planning schemes. The Act also establishes a clear procedure for public participation in decision making in amending planning schemes.

Some important sections of the planning scheme, in relation to the ecological values of a site, include:

- Section 12 of the State Planning Policy Framework, which identifies, and aims to protect, key biodiversity assets from inappropriate development;
- Clause 52.17 which identifies where native vegetation removal is exempt from requiring a planning permit; and
- Clause 66 which identifies all of the mandatory referral authorities. In particular, the Victorian Department of Energy, Environment and Climate Action is identified as the recommending referral authority if a proponent proposes:
    - *'To remove, destroy or lop native vegetation in the Detailed Assessment Pathway as defined in the Guidelines for the removal, destruction or lopping of native vegetation;*
    - *To remove, destroy or lop native vegetation if a property vegetation plan applies to the site; and*
    - *To remove, destroy or lop native vegetation on Crown land which is occupied or managed by the responsible authority'* (Department of Transport and Planning 2025).

***Catchment and Land Protection Act 1994* (Vic)**

The *Catchment and Land Protection Act 1994* (Vic) (CALP Act) is the principle legislation relating to the management of pest plants and animals in Victoria. Under this Act, landowners have a responsibility to avoid causing or contributing to land degradation. Where possible, landowners are required to conserve soil, protect water resources, eradicate 'regionally prohibited' weeds, prevent the growth and spread of 'regionally controlled' weeds and control pest animals. The CALP Act lists the species that are considered weeds and pest animals.

***Wildlife Act 1975* (Vic)**

Victoria's *Wildlife Act 1975* (Vic) and the *Wildlife Regulations 2002* (Vic) protect all indigenous vertebrate fauna, some non-indigenous vertebrate fauna, and some invertebrate fauna listed as 'threatened' under the FFG Act. The *Wildlife Act 1975* (Vic) prevents intentional injury to wildlife and stipulates that a licence should be granted where there is a possibility that wildlife are injured, or where wildlife is to be kept, relocated or traded.

In most cases, where the proponent is planning to develop a site, a planning permit approval provides this licencing approval, however, this report advises if an additional permit is required. Circumstances where this legislation may not be relevant is where fish are involved, on public land where additional regulatory approval is required, or where other permits are required (such as where fauna are required to undergo invasive procedures or installation of telemetry systems).

***Fisheries Act 1995 (*Vic)**

The *Fisheries Act 1995* (Vic) provides the legislative framework for the regulation, management conservation of Victorian fish species and their habitats. As with the Victorian *Wildlife Act 1975* described above, the key method to ensure compliance is through licencing. Where fish, or their habitats, are likely to be impacted, this report will identify additional requirements.

Other relevant policy

***Guidelines for the Removal, Destruction or Lopping of Native Vegetation* (Department of Environment Land Water and Planning 2017c)**

The *Guidelines for the Removal, Destruction or Lopping of Native Vegetation* (Department of Environment Land Water and Planning 2017) were released by DELWP in December 2017. A permit to remove native vegetation under clause 52.16 and 52.17 of the Victoria Planning Provisions is required unless:

- The table of exemptions to this clause specifically states that a permit is not required;
- It is native vegetation or an area specified in the schedule to the clause;
- A Native Vegetation Precinct Plan corresponding to the land is incorporated into the relevant planning scheme; or
- Bushfire exemptions apply in bushfire prone areas (Department of Environment Land Water and Planning 2017).

The Guidelines describe the permitting process for applications to remove native vegetation on private and public property within Victoria. A key strategy of the State Planning Policy Framework,

relating to biodiversity, is to ensure that there is no net loss to biodiversity as a result of the removal, destruction or lopping of native vegetation. This is achieved through iteratively applying the three-step approach:

1. Avoiding the removal, destruction or lopping of native vegetation.
2. Minimising impacts from the removal, destruction or lopping of native vegetation that cannot be avoided.
3. Providing an offset to compensate for the biodiversity impact from the removal, destruction or lopping of native vegetation (Department of Environment Land Water and Planning 2017; p. 4).

Native vegetation is defined in the Victoria Planning Provisions as 'plants that are indigenous to Victoria, including trees, shrubs, herbs and grasses' (Department of Environment Land Water and Planning 2017).

Native vegetation is further classified into two categories (Department of Environment Land Water and Planning 2017):

- A patch of native vegetation (measured in hectares) is either:
    - An area of vegetation where at least 25 per cent of the total perennial understorey plant cover is native, or
    - Any area with three or more native canopy trees where the drip line of each tree touches the drip line of at least one other tree, forming a continuous canopy, or
    - Any mapped wetland included in the *Current Wetlands Map*, available in DELWP systems and tools.

OR

- A scattered tree (measured in number of trees), is a native canopy tree that does not form a patch (Department of Environment Land Water and Planning 2017).

In addition, a canopy tree with a Diameter at Breast Height (DBH) greater than or equal to the large tree benchmark for the relevant bioregional EVC is defined as a large tree. Large trees can be either a large scattered tree or a large tree within a patch.

The contribution that is made by native vegetation to the biodiversity values of Victoria is determined through an assessment of both site-based information and landscape scale information.

At a site-based level, the contribution is determined through an assessment of:

- The extent of native vegetation;
- The number of large trees (either within a patch or scattered trees), relative to the appropriate EVC benchmark;
- The native vegetation condition, which is determined through a Habitat Hectare assessment
- The conservation status of the Ecological Vegetation Class (EVC) to which the vegetation can be classified; and,
- The presence of sensitive wetlands and coastal areas.

At a landscape scale, the value of the vegetation is determined with reference to its strategic context in the Victorian landscape. This is determined by the vegetation's 'Strategic Biodiversity Score' (SBS) and its 'Habitat Importance Score' (HIS) for its value to rare and threatened species (Department of Environment Land Water and Planning 2017).

All native vegetation within Victoria has a SBS that has been determined through spatial modelling, based on its rarity, level of depletion, species habitats, and condition and connectivity (Department of Environment Land Water and Planning 2017). SBS scores are between 0 and 1 and are used to determine the offset required for the loss of that vegetation. Native vegetation only has a HIS score if it is habitat for a particular rare or threatened species (Department of Environment Land Water and Planning 2017). There are two types of rare or threatened species habitats that may be provided by native vegetation:

- **Highly localised habitats for rare or threatened species** – where impact to this particular patch of native vegetation could result in a significant biodiversity impact, such as a breeding colony or species with a limited geographic extent.

- **Dispersed rare or threatened species habitats** – where habitat for the threatened species has become depleted or fragmented over time (Department of Environment Land Water and Planning 2017).

The HIS is used to apply the decision guidelines in relation to the removal of a patch of native vegetation and to determine offset requirements (Department of Environment Land Water and Planning 2017).

Applications to remove native vegetation are categorised against one of three assessment pathways. These pathways are categorised as:

- Basic – limited impacts on biodiversity.
- Intermediate – could impact on large trees, endangered EVCs, and sensitive wetlands and coastal areas.
- Detailed – could impact on large trees, endangered EVCs, sensitive wetlands and coastal areas, and could significantly impact on habitat for rare or threatened species (Department of Environment Land Water and Planning 2017).

This is initially determined in two ways, based on the 'location map' and the extent risk of the vegetation proposed to be removed. The location risk is determined with reference to the *Native Vegetation Location Risk* map available on DEECA's website. This map shows whether native vegetation is classified as Location 1, 2 or 3.

The extent risk is determined based on the amount of native vegetation that is proposed for removal and includes the area (in hectares) of impact to native vegetation, the number of scattered trees, and the number of large trees (Table A5).

Table A5. Assessment pathways for removal of remnant patches of native vegetation (Department of Environment Land Water and Planning 2017).

Extent	Location		
	Location 1	Location 2	Location 3
Less than 0.5 hectares and not including any large trees	Basic	Intermediate	Detailed
Less than 0.5 hectares and including one or more large trees	Intermediate	Intermediate	Detailed
0.5 hectares or more	Detailed	Detailed	Detailed

All applications to remove native vegetation must include the following information:

1. Information about the native vegetation to be removed, including:
    a. The assessment pathway and reason for the assessment pathway;
    b. A description of the native vegetation to be removed;
    c. Maps showing the native vegetation and property in context;
    d. The offset requirement, determined in accordance with section 5 of the Guidelines that will apply if the native vegetation is approved to be removed.
2. Topographic and land information relating to the native vegetation to be removed;
3. Recent, dated photographs of the native vegetation to be removed;
4. Details of any other native vegetation approved to be removed, or that was removed without the required approvals, on the same property or on contiguous land in the same ownership as the applicant, in the five year period before the application for a permit is lodged;
5. An 'Avoid and Minimise' statement;
6. A copy of any Property Vegetation Plan contained within an agreement made pursuant to section 69 of the *Conservation, Forests and Lands Act 1987* (Vic) that applies to the native vegetation to be removed;
7. Where the removal of native vegetation is to create defendable space, a written statement explaining why the removal of native vegetation is necessary;
8. If the application is under Clause 52.16, a statement that explains how the proposal responds to the Native Vegetation Precinct Plan considerations at decision guideline 8, and
9. An offset statement providing evidence that an offset that meets the offset requirements for the native vegetation to be removed has been identified, and can be secured in accordance with the Guidelines (Department of Environment Land Water and Planning 2017; p. 20-21).

If the application will be assessed under the Detailed Assessment Methodology, the following additional requirements apply:

10. A site assessment report of the native vegetation to be removed, including:
    a. A habitat hectare assessment of any patches of native vegetation, including the condition, extent (in hectares), Ecological Vegetation Class and bioregional conservation status.
    b. The location, number, circumference (in centimetres measured at 1.3 metres above ground level) and species of any large trees within patches.

c. The location, number, circumference (in centimetres measured at 1.3 metres above ground level) and species of any scattered trees, and whether each tree is small or large.

11. Information about impacts on rare or threatened species habitat, including:
    a. The relevant section of the Habitat importance map for each rare or threatened species requiring a species offset.
    b. For each rare or threatened species that the native vegetation to be removed is habitat for, according to the Habitat importance maps: - the species' conservation status - the proportional impact of the removal of native vegetation on the total habitat for that species - whether their habitats are highly localised habitats, dispersed habitats, or important areas of habitat within a dispersed species habitat (Department of Environment Land Water and Planning 2017; p. 22).

Ten decisions guidelines are identified within the Guidelines that the responsible or referral authority must consider when deciding on an application to remove native vegetation. These are summarised as follows:

1. The degree to which the application avoids and minimises impacts to native vegetation, and where vegetation is proposed to be removed, the highest quality vegetation is avoided;
2. The role that the vegetation to be removed has in relation to landscape services such as erosion control, ground-water quality, waterway quality;
3. The role of the vegetation in the preservation of landscape features;
4. Whether any part of the native vegetation to be removed, destroyed or lopped is protected under the *Aboriginal Heritage Act 2006* (Vic);
5. The need to remove, destroy or lop native vegetation to create defendable space to reduce the risk of bushfire to life and property, having regard to other available bushfire risk mitigation measures;
6. Whether the native vegetation to be removed is in accordance with any Property Vegetation Plan that applies to the site;
7. Whether an offset that meets the offset requirements for the native vegetation to be removed has been identified and can be secured in accordance with the Guidelines;
8. Whether the application is consistent with a Native Vegetation Precinct Plan (where relevant);
9. For applications in both the Intermediate and Detailed Assessment Pathway only, the impacts on biodiversity values that would occur as a result of vegetation removal; and,
10. For applications in the Detailed Assessment Pathway only, the impacts on habitat for rare or threatened species (Department of Environment Land Water and Planning 2017).

Offset requirements

In all cases where native vegetation is approved for removal, the proponent is liable for the security of an offset site that meets the requirements under the Guidelines. An offset can be either a:

- First party offset – on the same property as the proposed removal of native vegetation, or on another property owned or managed (in the case of Crown land) by the party requiring the offset, or
- Third party offset – on another party's property. Third party offsets are traded as native vegetation credits.

In most cases a third party offset is the simplest and most cost effective means of securing the required offset.

There are three components to offset requirements:

1. Offset type (general or species).
2. Offset amount (measured in general or species habitat units).
3. Offset attributes.

Two types of offset are identified: General Offsets and Specifies Offsets. Specific Offsets may only be required if the native vegetation to be removed is habitat for rare or threatened species that are identified in an Intermediate or Detailed Assessment Pathway application (Department of Environment Land Water and Planning 2017). To determine this, a 'Specific Biodiversity Equivalence Score' is calculated by multiplying the habitat hectares with the HIS for each species that may be impacted. For each of the species, this figure is divided by the sum of all the Specific Biodiversity Value Scores calculated for the remaining vegetation under investigation to give a specific offset threshold for each species. If the amount of vegetation removed exceeds this threshold, then a Specific Offset is required. If it does not exceed the threshold, then only a General Habitat Offset is required (Table A6)(Department of Environment Land Water and Planning 2017).

Table A6 summarises the offset requirements for each of the Assessment Pathways and offset types.

Table A6. Offset requirements for the removal of native vegetation

Assessment Pathway	Offset Type	Offset amount		Offset attributes	
		Risk Adjusted Biodiversity Equivalence	Species Habitat Requirement	Vicinity	Strategic Biodiversity Score
Basic Assessment Pathway	General offset	1.5 times the general biodiversity equivalence score[1] of the native vegetation to be removed.	No restrictions.	In the same Catchment Management Authority boundary as the native vegetation to be removed.	At least 80 per cent of the SBS of the native vegetation to be removed.
Intermediate or Detailed Assessment Pathway	General offset	1.5 times the general biodiversity equivalence score of the native vegetation to be removed.	No restrictions.	In the same Catchment Management Authority boundary as the native vegetation to be removed.	At least 80 per cent of the SBS of the native vegetation to be removed.
	Specific offset	For each species impacted, 2 times the specific biodiversity equivalence score of the native vegetation to be removed.	Likely habitat for each rare or threatened species that a specific offset is required for, according to the specific-general offset test.	No restrictions.	No restrictions.

[1] The general biodiversity equivalence score is determined by multiplying the vegetation's habitat hectare score by its SBS.

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Arboricultural Impact Assessment

Location:

23 Ryan Road, Pakenham

Report Commissioned by:

Ryan Road Pakenham Land Pty Ltd

[redacted]

Arbkey ref: 22-11-21IMPACTSU8DIVRyanPakenham.docx

Date submitted: January 30, 2026

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1 Introduction

Arbkey has been engaged by Ryan Road Pakenham Land Pty Ltd to provide an Arboricultural Impact Assessment for trees likely to be affected by a proposed development at 23 Ryan Road, Pakenham. Arboricultural Impact Assessments are a procedure for determining the viability of trees at the design and review stage of a project. For the report arbkey has:

- Identified and assessed the trees, providing their location, species, dimensions, useful life expectancy and health and structural condition.
- Allocated each tree an arboricultural value, indicating its merit for retention throughout nearby disturbance.
- Calculated the size of the Notional Root Zone (NRZ) in accordance with Australian Standard 4970, Protection of Trees on Development Sites.
- Calculated and provided comment regarding the impact of the proposed development to the trees NRZs and assessed the suitability for retention of all trees against the current development plans.
- Provided recommendations to protect any trees through the proposed developments.

2 Site Details

The subject site is an approx. 11,3000m2 property featuring a dilapidated house and shed within its south-eastern section, an area of pasture within its western section and a border of trees (Figure 1). Mid to large size trees, greater than 5m in height, are a common and important feature of both the subject site and the wider surrounds.

Figure 1: Subject site

2.1 Development Proposal

Subdivision of the property to two (2) lots and establishment of an indicative building envelope on each lot is proposed.

2.2 Planning and Policy Context

The subject site is located within Low Density Residential Zone – Schedule 2 of the Cardinia Planning Scheme (DTP 2026). The vegetation protection related planning or policy controls for the site and how they affect the assessed trees has been provided in Table 1.

Table 1: Vegetation controls at site

Planning/Policy Control	Overview of control
Vegetation Protection Overlay (VPO1)	A permit is required to remove, destroy or lop any vegetation. A list of environmental weed species is exempt
52.17 Native Vegetation	A permit (and provision of offset) is required to remove or destroy non-planted Victorian native vegetation. A list of exemptions apply

Trees within 10m of an existing dwelling, or 1m of an existing fence, constructed prior to September 2009 are exempt from planning scheme controls due to the site's location within a Bushfire Prone Area (DTP 2025)

Due to their ownership, any trees within adjacent third-party owned property must remain viable throughout works at the subject site unless under agreement with the tree's respective owner. Modification of trees in adjacent property may also be subject to permit approval.

2.3 Site Map

A site map detailing existing conditions and tree locations has been provided in Appendix 1: Site Map

3 Methodology

On the 31 January 2023, Lachlan Scott undertook inspection of trees greater than 3m in height located at, or with tree protection zones (AS4970 2025) likely to intersect the property at, 23 Ryan Road, Pakenham. The following information was collected for the trees:

- Tree Species
- Tree Location
- Height (m)
- Crown Spread (m)
- Diameter at Standard Height (DSH) at 1.4m above ground level (cm)
- Diameter at Base (DAB) at just above the root flare (cm)
- Health
- Structure
- Significance
- Photographs of tree

Only a ground based visual inspection was undertaken of all trees according to the principles of Visual Tree Assessment and tree hazard assessment described in Harris, Clark and Matheny (1999) and Mattheck and Breloer (1994).

Tree location has been derived using a feature survey provided by the client or if not present aligned using an RTK corrected GNSS receiver.

Height was measured on site using an impulse laser accurate to +/- 30cm. Crown spread values or drawings are indicative of crown size only, not shape or form.

A diameter tape was used to measure DSH. To prevent trespass, DSH has been estimated on adjacent sites.

Health, Structure and Significance are qualitative values derived from visual indicators and the authors experience and qualifications.

Encroachment of NRZs by the development has been calculated using GIS software.

Full data collection definitions are available in Appendix 6: Data Definitions.

3.1 Documents Reviewed

Table 2: Documents reviewed to assist in the compilation of this report

Document Name	DWG/Document #	Author	Document Description	Date compiled/drawn
Sub BN Ver 3	PS 928678 L	Nobelius Land Surveyors	Plan of Subdivision	N.d

4 Observations

4.1 Tree Details

148 trees were assessed, 115 on the site itself and 33 within adjacent third-party managed property (Table 3). Full details of the assessed trees have been provided in Appendix 2: Tree Details.

Table 3: Count of assessed species and their respective species origin

Genus Species	Common Name	Species Origin	Count of Trees	Tree IDs
Melaleuca armillaris	Giant Honey Myrtle	Australian Native	40	5, 6, 26, 27, 30, 55, 88, 92, 97, 102, 103, 104, 105, 107, 108, 109, 110, 111, 112, 116, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 133, 134, 137, 138, 140, 142, 143, 144
Corymbia maculata	Spotted Gum	Australian Native	18	20, 24, 31, 52, 58, 67, 74, 89, 90, 93, 95, 98, 99, 117, 118, 132, 141, 145
Eucalyptus botryoides	Southern Mahogany	Australian Native	10	29, 32, 34, 44, 46, 62, 82, 83, 85, 113
Eucalyptus cinerea	Mealy Stringybark	Australian Native	9	38, 47, 57, 64, 72, 76, 79, 80, 87
Eucalyptus globulus	Blue Gum	Australian Native	7	68, 77, 86, 91, 100, 131, 139
Photinia xfraseri	Chinese Hawthorn	Exotic	7	2, 7, 9, 10, 12, 13, 16
Pittosporum undulatum	Sweet Pittosporum	Australian Native	7	4, 37, 41, 43, 45, 50, 78
Corymbia ficifolia	Flowering Gum	Australian Native	6	3, 8, 11, 14, 17, 18
Mixed Species			44	

5 Discussion

5.1 Arboricultural Value

All the assessed trees have been attributed an arboricultural value (Table 4). Arboricultural value is a calculated rating indicating the arboricultural merit of the tree for retention through any nearby disturbance. It is a qualitative combination of the trees ULE and significance values. Trees of higher arboricultural value should be prioritised for retention through works that may impact trees. Conversely, trees of low or no arboricultural value can often be removed to facilitate a development with little or no effect on wider landscape value.

Trees attributed an arboricultural value of 'Third Party Ownership' are located on adjacent land to the assessment. It is assumed that the owner of the tree attributes it a 'High' arboricultural value and requires its retention in the landscape.

Table 4: Overview of arboricultural value

Arboricultural Value	Count	Tree IDs
High	4	74, 90, 118, 131
Medium	22	19, 25, 29, 31, 33, 35, 36, 40, 52, 53, 58, 66, 67, 95, 98, 101, 117, 132, 135, 139, 141, 145
Low	85	7, 9, 10, 12, 13, 15, 16, 22, 23, 26, 27, 28, 30, 34, 37, 39, 41, 42, 43, 45, 46, 49, 50, 51, 54, 55, 56, 59, 60, 61, 63, 65, 70, 71, 73, 75, 76, 77, 78, 80, 81, 82, 84, 85, 86, 89, 92, 93, 97, 99, 100, 102, 103, 104, 105, 107, 108, 109, 110, 111, 112, 113, 115, 116, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 133, 134, 136, 137, 138, 140, 142, 143, 144
None	4	32, 48, 69, 88
Third Party Ownership	33	1, 2, 3, 4, 5, 6, 8, 11, 14, 17, 18, 20, 21, 24, 38, 44, 47, 57, 62, 64, 68, 72, 79, 83, 87, 91, 94, 96, 106, 114, 146, 147, 183

5.2 Notional Root Zone (NRZ) and Structural Root Zone (SRZ)

AS4970 (2025) specifies areas drawn radially from each tree's stem which indicate the area required for its stability (SRZ) and viability (NRZ) throughout nearby disturbance such as development. Further information on NRZs and SRZs has provided in Appendix 7: Structural Root Zone and Notional Root Zone Overview

5.2.1 NRZ and SRZ details

NRZ and SRZ details for all trees has been supplied in Appendix 3: NRZ and SRZ Details.

5.3 Arboricultural Impact, NRZ Encroachment and Viability

5.3.1 Tree removal

13 trees are proposed for removal under the current development plans (Table 5). Permit approval is required for the removal of eight (8) of these trees, Trees 2, 10, 22, 29, 31, 32, 40 and 84, under the VPO at the site.

One (1) of the trees proposed for removal, Tree 2, is located within the council managed road reserve fronting the site. Permission from this tree's manager, Cardinia Shire, would be required prior to its removal.

Table 5: Trees proposed for removal, arboricultural value, and permit requirements.

Tree ID	Genus Species	Common Name	Arboricultural Value	Height (m)	Total DSH (cm)	Planning Permit Required?
2	*Photinia xfraseri*	Chinese Hawthorn	Third Party Ownership	6	44.25	Yes
10	*Photinia xfraseri*	Chinese Hawthorn	Low	5	16.52	Yes
12	*Photinia xfraseri*	Chinese Hawthorn	Low	5	19.24	
13	*Photinia xfraseri*	Chinese Hawthorn	Low	5	18.06	
16	*Photinia xfraseri*	Chinese Hawthorn	Low	5	17.58	
19	*Acer negundo*	Box Elder	Medium	9	54.77	
22	*Salix chilensis*	Chilean Willow	Low	8	44.27	Yes
23	*Liquidambar styraciflua*	Liquidamber	Low	10	29	
29	*Eucalyptus botryoides*	Southern Mahogany	Medium	15	110	Yes
31	*Corymbia maculata*	Spotted Gum	Medium	15	57	Yes
32	*Eucalyptus botryoides*	Southern Mahogany	None	6	18.44	Yes
40	*Melia azedarach*	White Cedar	Medium	9	56.15	Yes
84	*Castanea sativa*	Sweet Chestnut	Low	4	13.38	Yes

5.3.2 Consequential losses

Additionally, the proposed subdivision establishes new boundaries on properties larger than 4000m2 in area. Considering this and section 52.17 of the planning scheme at the site, Victorian native vegetation within 1m of the newly proposed boundaries must be considered as consequential losses, and must be offset, as part of the development application. No Victorian native vegetation is within 1m of the newly proposed boundaries and no trees are to be considered as consequential losses due to the proposal.

5.3.3 Impact of design on trees to be retained

To assess the viability of the trees proposed for retention throughout the design's implementation, their NRZ and SRZ has been calculated and mapped as per AS4970 (2025). Where a development's footprint overlaps a NRZ it is termed 'encroachment' within AS4970 (2025). AS4970 (2005) categorises NRZ encroachment into:

- Minor (<= 10% NRZ encroachment)
    - Minor NRZ encroachment is unlikely to cause a significant impact to tree health or longevity and is considered generally acceptable. Trees with 'Minor' NRZ encroachment would remain viable throughout the implementation of the proposed design without the implementation of encroachment mitigation measures.
- Moderate (>10% and <= 20% NRZ encroachment)
    - Moderate NRZ encroachment is considered tolerable providing that an arborist demonstrates, usually through desktop analysis and/or recommendations of construction controls, that the tree would remain viable throughout the NRZ encroachment.
- Major (>20% NRZ encroachment)
    - Major NRZ encroachment is considered generally intolerable. To manage these trees throughout the development either:
        - an alternative design must be explored with the design team, or
        - a detailed investigation and/or justifications must be undertaken/supplied by an arborist that demonstrates that the tree would remain viable throughout the major NRZ encroachment.

None of the trees proposed for retention have NRZ encroached by the proposed development's footprint and all would remain viable throughout its implementation.

5.3.4 NRZ, SRZ and Encroachment Map

Maps detailing the NRZ, SRZ and Encroachment have been provided in Appendix 4: NRZ, SRZ and Encroachment Map.

6 Conclusions and Recommendations

Subdivision of the property to two (2) lots and establishment of an indicative building envelope on each lot is currently proposed at 23 Ryan Road, Pakenham. Arbkey has been engaged to assess the impact of the development on the trees at or adjacent to the site. 148 trees were assessed, 115 on the site and 33 within adjacent property.

13 of these trees are proposed for removal under the development plans. Permit approval is required for the removal of eight (8) of these trees, Trees 2, 10, 22, 29, 31, 32, 40 and 84, under the VPO at the site. One (1) of the trees proposed for removal, Tree 2, is located within the council managed road reserve fronting the site. Permission from this tree's manager, Cardinia Shire, would be required prior to its removal.

To assess the viability of the trees proposed for retention throughout the design's implementation, their notional root zone (NRZ) and structural root zone (SRZ) has been calculated and mapped as per AS4970 (2025). Where a development's footprint overlaps a NRZ it is termed 'encroachment' within AS4970 (2025). None of the trees proposed for retention have NRZ encroached by the proposed development's footprint and all would remain viable throughout its implementation. It is recommended that:

- Trees that are unable to be retained through the development are removed following approval of final plans by the relevant authority and tree-owners.

7 References

AS 4970, 2025, Australian Standard, Protection of Trees on Development Sites, Standards Australia

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8 Appendix 1: Site Map

Figure 2: Site Map – Existing Condition

9 Appendix 2: Tree Details

Table 6: Details of assessed trees

Tree ID	*Genus Species*	Common Name	Species Origin	Height (m)	Crown Spread (m)	DSH [Stems] (cm)	DAB (cm)	Health	Structure	Maturity	ULE (years)	Arboricultural Value
1	*Eucalyptus radiata*	Narrow-leaved Peppermint	Indigenous	8	10	73.76 [56, 48]	80	Good	Fair	Mature	15 to 40	Third Party Ownership
2	*Photinia xfraseri*	Chinese Hawthorn	Exotic	6	6	44.25 [18, 24, 21, 19, 16]	45	Fair	Fair	Mature	5 to 15	Third Party Ownership
3	*Corymbia ficifolia*	Flowering Gum	Australian Native	3	1	5	7	Good	Good	Immature	15 to 40	Third Party Ownership
4	*Pittosporum undulatum*	Sweet Pittosporum	Australian Native	6	6	30.03 [18, 17, 17]	33	Good	Fair	Mature	5 to 15	Third Party Ownership
5	*Melaleuca armillaris*	Giant Honey Myrtle	Australian Native	9	8	46.23 [36, 29]	47	Good	Fair	Mature	5 to 15	Third Party Ownership
6	*Melaleuca armillaris*	Giant Honey Myrtle	Australian Native	9	7	34	40	Good	Fair	Mature	5 to 15	Third Party Ownership
7	*Photinia xfraseri*	Chinese Hawthorn	Exotic	3	4	13	15	Fair	Fair	Semi-mature	5 to 15	Low
8	*Corymbia ficifolia*	Flowering Gum	Australian Native	9	6	22	25	Good	Fair	Semi-mature	15 to 40	Third Party Ownership
9	*Photinia xfraseri*	Chinese Hawthorn	Exotic	4	3	15.3 [9, 9, 6, 6]	16	Fair	Fair	Mature	5 to 15	Low
10	*Photinia xfraseri*	Chinese Hawthorn	Exotic	5	4	16.52 [9, 8, 8, 8]	19	Fair	Fair	Mature	5 to 15	Low
11	*Corymbia ficifolia*	Flowering Gum	Australian Native	5	5	26.83 [24, 12]	32	Good	Fair	Semi-mature	15 to 40	Third Party Ownership
12	*Photinia xfraseri*	Chinese Hawthorn	Exotic	5	6	19.24 [9, 9, 8, 12]	23	Fair	Fair	Mature	5 to 15	Low
13	*Photinia xfraseri*	Chinese Hawthorn	Exotic	5	6	18.06 [9, 10, 9, 8]	23	Fair	Fair	Mature	5 to 15	Low
14	*Corymbia ficifolia*	Flowering Gum	Australian Native	5	4	27	31	Good	Fair	Semi-mature	15 to 40	Third Party Ownership
15	*Quercus palustris*	Pin Oak	Exotic	9	8	19	23	Good	Fair	Semi-mature	>40	Low
16	*Photinia xfraseri*	Chinese Hawthorn	Exotic	5	6	17.58 [14, 7, 8]	24	Fair	Fair	Mature	5 to 15	Low
17	*Corymbia ficifolia*	Flowering Gum	Australian Native	5	6	43	50	Good	Fair	Mature	15 to 40	Third Party Ownership
18	*Corymbia ficifolia*	Flowering Gum	Australian Native	5	4	28	32	Good	Fair	Semi-mature	15 to 40	Third Party Ownership

Tree ID	*Genus Species*	Common Name	Species Origin	Height (m)	Crown Spread (m)	DSH [Stems] (cm)	DAB (cm)	Health	Structure	Maturity	ULE (years)	Arboricultural Value
19	*Acer negundo*	Box Elder	Exotic	9	11	54.77 [20, 34, 38]	57	Fair	Fair	Mature	5 to 15	Medium
20	*Corymbia maculata*	Spotted Gum	Australian Native	14	13	74	84	Good	Fair	Mature	>40	Third Party Ownership
21	*Syzygium paniculatum*	Magenta Cherry	Australian Native	3	1	7	8	Good	Fair	Immature	15 to 40	Third Party Ownership
22	*Salix chilensis*	Chilean Willow	Exotic	8	5	44.27 [21, 15, 15, 30, 13]	45	Fair	Poor	Mature	5 to 15	Low
23	*Liquidambar styraciflua*	Liquidamber	Exotic	10	8	29	33	Good	Fair	Semi-mature	>40	Low
24	*Corymbia maculata*	Spotted Gum	Australian Native	8	5	19.24 [17, 9]	22	Good	Fair	Immature	>40	Third Party Ownership
25	*Eucalyptus mannifera*	Brittle Gum	Australian Native	13	10	72.2 [58, 43]	80	Good	Fair	Mature	>40	Medium
26	*Melaleuca armillaris*	Giant Honey Myrtle	Australian Native	8	9	56.12 [27, 30, 39]	72	Fair	Fair	Mature	5 to 15	Low
27	*Melaleuca armillaris*	Giant Honey Myrtle	Australian Native	8	7	46.86 [36, 30]	53	Fair	Fair	Mature	5 to 15	Low
28	*Eucalyptus kitsoniana*	Gippsland Mallee	Australian Native	10	9	44	50	Fair	Fair	Mature	5 to 15	Low
29	*Eucalyptus botryoides*	Southern Mahogany	Australian Native	15	21	110	124	Good	Fair	Mature	15 to 40	Medium
30	*Melaleuca armillaris*	Giant Honey Myrtle	Australian Native	8	11	65.37 [57, 32]	75	Good	Fair	Mature	5 to 15	Low
31	*Corymbia maculata*	Spotted Gum	Australian Native	15	8	57	68	Good	Fair	Mature	>40	Medium
32	*Eucalyptus botryoides*	Southern Mahogany	Australian Native	6	5	18.44 [14, 12]	25	Fair	Poor	Mature	<5	None
33	*Eucalyptus leucoxylon*	Yellow Gum	Australian Native	12	12	47	55	Good	Fair	Mature	>40	Medium
34	*Eucalyptus botryoides*	Southern Mahogany	Australian Native	12	12	77	90	Fair	Poor	Mature	5 to 15	Low
35	*Grevillea robusta*	Silky Oak	Australian Native	15	8	42	50	Good	Good	Mature	15 to 40	Medium
36	*Eucalyptus tereticornis*	Forest Red Gum	Australian Native	15	12	67	80	Fair	Fair	Mature	15 to 40	Medium
37	*Pittosporum undulatum*	Sweet Pittosporum	Australian Native	5	4	17.49 [15, 9]	19	Good	Fair	Semi-mature	5 to 15	Low
38	*Eucalyptus cinerea*	Mealy Stringybark	Australian Native	13	12	70.71 [50, 50]	85	Good	Fair	Mature	15 to 40	Third Party Ownership
39	*Ligustrum lucidum*	Privet	Exotic	5	5	17.52 [9, 7, 8, 7, 8]	22	Good	Fair	Mature	5 to 15	Low

		Common Name	Species Origin	Height (m)	Crown Spread (m)	DSH [Stems] (cm)	DAB (cm)	Health	Structure	Maturity	ULE (years)	Arboricultural Value
40	*Melia azedarach*	White Cedar	Australian Native	9	8	56.15 [40, 32, 23]	64	Good	Fair	Mature	15 to 40	Medium
41	*Pittosporum undulatum*	Sweet Pittosporum	Australian Native	6	3	10	12	Fair	Fair	Semi-mature	5 to 15	Low
42	*Ligustrum lucidum*	Privet	Exotic	5	4	21.63 [15, 9, 8, 7, 7]	24	Good	Fair	Mature	5 to 15	Low
43	*Pittosporum undulatum*	Sweet Pittosporum	Australian Native	3	3	8	12	Good	Fair	Semi-mature	5 to 15	Low
44	*Eucalyptus botryoides*	Southern Mahogany	Australian Native	9	5	22	30	Good	Fair	Semi-mature	15 to 40	Third Party Ownership
45	*Pittosporum undulatum*	Sweet Pittosporum	Australian Native	5	5	16	19	Good	Fair	Mature	5 to 15	Low
46	*Eucalyptus botryoides*	Southern Mahogany	Australian Native	8	3	16	20	Good	Good	Semi-mature	15 to 40	Low
47	*Eucalyptus cinerea*	Mealy Stringybark	Australian Native	9	5	82.01 [50, 65]	90	Good	Fair	Mature	>40	Third Party Ownership
48	*Ligustrum lucidum*	Privet	Exotic	4	3	14	16	Poor	Poor	Mature	<5	None
49	*Prunus persica*	Peach/Nectarine	Exotic	6	6	23.04 [15, 12, 9, 9]	24	Fair	Fair	Mature	15 to 40	Low
50	*Pittosporum undulatum*	Sweet Pittosporum	Australian Native	4	3	8	10	Good	Fair	Semi-mature	5 to 15	Low
51	*Acacia mearnsii*	Black Wattle	Indigenous	7	8	26	31	Fair	Fair	Mature	5 to 15	Low
52	*Corymbia maculata*	Spotted Gum	Australian Native	17	12	69	75	Good	Fair	Mature	15 to 40	Medium
53	*Syzygium paniculatum*	Magenta Cherry	Australian Native	7	8	37.27 [22, 22, 15, 14]	44	Good	Fair	Mature	15 to 40	Medium
54	*Prunus persica*	Peach/Nectarine	Exotic	5	3	12	15	Fair	Fair	Semi-mature	15 to 40	Low
55	*Melaleuca armillaris*	Giant Honey Myrtle	Australian Native	5	5	30	42	Fair	Fair	Mature	5 to 15	Low
56	*Prunus persica*	Peach/Nectarine	Exotic	4	4	13	15	Fair	Fair	Semi-mature	15 to 40	Low
57	*Eucalyptus cinerea*	Mealy Stringybark	Australian Native	9	15	55.57 [48, 28]	65	Good	Fair	Mature	>40	Third Party Ownership
58	*Corymbia maculata*	Spotted Gum	Australian Native	16	9	57.38 [43, 38]	58	Good	Fair	Mature	>40	Medium
59	*xCuprocyparis leylandii*	Leyland Cypress	Exotic	8	7	37.01 [28, 19, 15]	40	Good	Fair	Mature	15 to 40	Low
60	*xCuprocyparis leylandii*	Leyland Cypress	Exotic	9	5	24.7 [21, 13]	27	Good	Fair	Mature	15 to 40	Low
61	*xCuprocyparis leylandii*	Leyland Cypress	Exotic	9	5	20	26	Good	Good	Mature	15 to 40	Low
62	*Eucalyptus botryoides*	Southern Mahogany	Australian Native	13	11	49	55	Good	Fair	Mature	15 to 40	Third Party Ownership

Tree ID	*Genus Species*	Common Name	Species Origin	Height (m)	Crown Spread (m)	DSH [Stems] (cm)	DAB (cm)	Health	Structure	Maturity	ULE (years)	Arboricultural Value
63	*xCuprocyparis leylandii*	Leyland Cypress	Exotic	8	4	15	20	Good	Good	Semi-mature	15 to 40	Low
64	*Eucalyptus cinerea*	Mealy Stringybark	Australian Native	14	13	68	75	Good	Fair	Mature	>40	Third Party Ownership
65	*xCuprocyparis leylandii*	Leyland Cypress	Exotic	8	5	15	20	Good	Good	Semi-mature	15 to 40	Low
66	*Juglans nigra*	Black Walnut	Exotic	10	9	35	40	Good	Fair	Mature	15 to 40	Medium
67	*Corymbia maculata*	Spotted Gum	Australian Native	16	11	67	75	Good	Fair	Mature	15 to 40	Medium
68	*Eucalyptus globulus*	Blue Gum	Australian Native	19	13	118	125	Good	Fair	Mature	15 to 40	Third Party Ownership
69	*Acacia longifolia*	Sallow Wattle	Australian Native	4	6	13.45 [10, 9]	20	Fair	Poor	Over-mature	<5	None
70	*Olea europaea*	European Olive	Exotic	5	4	13.53 [7, 7, 7, 6]	19	Good	Fair	Semi-mature	15 to 40	Low
71	*Araucaria heterophylla*	Norfolk Island Pine	Australian Native	4	3	13	15	Good	Good	Immature	>40	Low
72	*Eucalyptus cinerea*	Mealy Stringybark	Australian Native	11	14	85.09 [46, 54, 47]	85	Good	Fair	Mature	>40	Third Party Ownership
73	*Juglans nigra*	Black Walnut	Exotic	6	5	28	35	Fair	Fair	Mature	5 to 15	Low
74	*Corymbia maculata*	Spotted Gum	Australian Native	15	19	74	85	Good	Fair	Mature	15 to 40	High
75	*Araucaria heterophylla*	Norfolk Island Pine	Australian Native	3	2	7	9	Good	Good	Immature	>40	Low
76	*Eucalyptus cinerea*	Mealy Stringybark	Australian Native	4	1	5	7	Good	Good	Immature	>40	Low
77	*Eucalyptus globulus*	Blue Gum	Australian Native	5	1	6	7	Good	Good	Immature	>40	Low
78	*Pittosporum undulatum*	Sweet Pittosporum	Australian Native	5	7	15	18	Good	Fair	Mature	5 to 15	Low
79	*Eucalyptus cinerea*	Mealy Stringybark	Australian Native	13	17	95.86 [46, 57, 39, 48]	105	Good	Fair	Mature	>40	Third Party Ownership
80	*Eucalyptus cinerea*	Mealy Stringybark	Australian Native	4	2	6	7	Good	Good	Immature	>40	Low
81	*Araucaria heterophylla*	Norfolk Island Pine	Australian Native	6	2	16	20	Good	Fair	Semi-mature	>40	Low
82	*Eucalyptus botryoides*	Southern Mahogany	Australian Native	7	5	10	15	Good	Good	Semi-mature	15 to 40	Low
83	*Eucalyptus botryoides*	Southern Mahogany	Australian Native	14	10	50	55	Good	Fair	Mature	15 to 40	Third Party Ownership
84	*Castanea sativa*	Sweet Chestnut	Exotic	4	4	13.38 [9, 7, 7]	16	Good	Fair	Semi-mature	15 to 40	Low

Tree ID	*Genus Species*	Common Name	Species Origin	[illegible] (m)	[illegible] (m)	DSH [Stems] (cm)	DAB (cm)	Health	Structure	Maturity	ULE (years)	Arboricultural Value
85	*Eucalyptus botryoides*	Southern Mahogany	Australian Native	5	[illegible]	17	21	Good	Good	Semi-mature	15 to 40	Low
86	*Eucalyptus globulus*	Blue Gum	Australian Native	13	9	55	65	Fair	Poor	Mature	<5	Low
87	*Eucalyptus cinerea*	Mealy Stringybark	Australian Native	11	15	73.55 [51, 53]	85	Good	Fair	Mature	>40	Third Party Ownership
88	*Melaleuca armillaris*	Giant Honey Myrtle	Australian Native	5	8	39.74 [23, 17, 20, 19]	42	Fair	Poor	Mature	<5	None
89	*Corymbia maculata*	Spotted Gum	Australian Native	5	2	7	9	Good	Good	Immature	>40	Low
90	*Corymbia maculata*	Spotted Gum	Australian Native	19	14	68	77	Good	Good	Mature	>40	High
91	*Eucalyptus globulus*	Blue Gum	Australian Native	20	9	83	90	Good	Fair	Mature	15 to 40	Third Party Ownership
92	*Melaleuca armillaris*	Giant Honey Myrtle	Australian Native	4	5	16.58 [9, 9, 7, 8]	17	Good	Fair	Mature	5 to 15	Low
93	*Corymbia maculata*	Spotted Gum	Australian Native	9	5	28	32	Good	Good	Semi-mature	>40	Low
94	*Acacia mearnsii*	Black Wattle	Indigenous	5	6	22.8 [18, 14]	25	Fair	Fair	Mature	5 to 15	Third Party Ownership
95	*Corymbia maculata*	Spotted Gum	Australian Native	10	10	48.92 [37, 32]	65	Good	Fair	Mature	>40	Medium
96	*Eucalyptus leucoxylon*	Yellow Gum	Australian Native	10	10	48	55	Fair	Fair	Mature	15 to 40	Third Party Ownership
97	*Melaleuca armillaris*	Giant Honey Myrtle	Australian Native	6	3	13	16	Good	Fair	Semi-mature	5 to 15	Low
98	*Corymbia maculata*	Spotted Gum	Australian Native	16	12	67.32 [48, 28, 38]	78	Good	Fair	Mature	>40	Medium
99	*Corymbia maculata*	Spotted Gum	Australian Native	9	5	20	24	Good	Good	Semi-mature	>40	Low
100	*Eucalyptus globulus*	Blue Gum	Australian Native	10	4	25	26	Fair	Good	Semi-mature	15 to 40	Low
101	*Acacia dealbata*	Silver Wattle	Indigenous	9	5	16	18	Good	Fair	Mature	5 to 15	Medium
102	*Melaleuca armillaris*	Giant Honey Myrtle	Australian Native	6	3	13	16	Good	Fair	Semi-mature	5 to 15	Low
103	*Melaleuca armillaris*	Giant Honey Myrtle	Australian Native	6	3	13	16	Good	Fair	Semi-mature	5 to 15	Low
104	*Melaleuca armillaris*	Giant Honey Myrtle	Australian Native	6	3	13	16	Good	Fair	Semi-mature	5 to 15	Low
105	*Melaleuca armillaris*	Giant Honey Myrtle	Australian Native	6	3	13	16	Good	Fair	Semi-mature	5 to 15	Low
106	*Corymbia citriodora*	Lemon-scented Gum	Australian Native	11	9	35	45	Good	Fair	Mature	>40	Third Party Ownership

Tree ID	*Genus Species*	Common Name	Species Origin	Height (m)	Width (m)	DBH (cm)	DAB (cm)	Health	Structure	Maturity	ULE (years)	Arboricultural Value
107	*Melaleuca armillaris*	Giant Honey Myrtle	Australian Native	6	3	13	16	Good	Fair	Semi-mature	5 to 15	Low
108	*Melaleuca armillaris*	Giant Honey Myrtle	Australian Native	6	3	13	16	Good	Fair	Semi-mature	5 to 15	Low
109	*Melaleuca armillaris*	Giant Honey Myrtle	Australian Native	6	3	13	16	Good	Fair	Semi-mature	5 to 15	Low
110	*Melaleuca armillaris*	Giant Honey Myrtle	Australian Native	6	3	13	16	Good	Fair	Semi-mature	5 to 15	Low
111	*Melaleuca armillaris*	Giant Honey Myrtle	Australian Native	6	3	13	16	Good	Fair	Semi-mature	5 to 15	Low
112	*Melaleuca armillaris*	Giant Honey Myrtle	Australian Native	6	3	13	16	Good	Fair	Semi-mature	5 to 15	Low
113	*Eucalyptus botryoides*	Southern Mahogany	Australian Native	7	3	15	18	Good	Good	Semi-mature	15 to 40	Low
114	*Corymbia citriodora*	Lemon-scented Gum	Australian Native	15	13	38	49	Good	Fair	Mature	>40	Third Party Ownership
115	*Eucalyptus leucoxylon*	Yellow Gum	Australian Native	6	3	22	25	Fair	Fair	Mature	5 to 15	Low
116	*Melaleuca armillaris*	Giant Honey Myrtle	Australian Native	6	3	13	16	Good	Fair	Semi-mature	5 to 15	Low
117	*Corymbia maculata*	Spotted Gum	Australian Native	10	6	40.46 [26, 31]	42	Fair	Fair	Mature	15 to 40	Medium
118	*Corymbia maculata*	Spotted Gum	Australian Native	18	16	108	120	Good	Fair	Mature	>40	High
119	*Melaleuca armillaris*	Giant Honey Myrtle	Australian Native	6	3	13	16	Good	Fair	Semi-mature	5 to 15	Low
120	*Melaleuca armillaris*	Giant Honey Myrtle	Australian Native	5	8	27.91 [17, 12, 15, 11]	34	Fair	Poor	Mature	5 to 15	Low
121	*Melaleuca armillaris*	Giant Honey Myrtle	Australian Native	6	3	13	16	Good	Fair	Semi-mature	5 to 15	Low
122	*Melaleuca armillaris*	Giant Honey Myrtle	Australian Native	6	3	13	16	Good	Fair	Semi-mature	5 to 15	Low
123	*Melaleuca armillaris*	Giant Honey Myrtle	Australian Native	6	3	13	16	Good	Fair	Semi-mature	5 to 15	Low
124	*Melaleuca armillaris*	Giant Honey Myrtle	Australian Native	6	3	13	16	Good	Fair	Semi-mature	5 to 15	Low
125	*Melaleuca armillaris*	Giant Honey Myrtle	Australian Native	6	3	13	16	Good	Fair	Semi-mature	5 to 15	Low
126	*Melaleuca armillaris*	Giant Honey Myrtle	Australian Native	6	3	13	16	Good	Fair	Semi-mature	5 to 15	Low
127	*Melaleuca armillaris*	Giant Honey Myrtle	Australian Native	5	7	35	40	Fair	Poor	Mature	5 to 15	Low

Tree ID	*Genus Species*	Common Name	Species Origin	Height (m)	Crown Spread (m)	DSH [Stems] (cm)	DAB (cm)	Health	Structure	Maturity	ULE (years)	Arboricultural Value
128	*Melaleuca armillaris*	Giant Honey Myrtle	Australian Native	6	3	13	16	Good	Fair	Semi-mature	5 to 15	Low
129	*Melaleuca armillaris*	Giant Honey Myrtle	Australian Native	9	3	9	12	Good	Fair	Immature	5 to 15	Low
130	*Melaleuca armillaris*	Giant Honey Myrtle	Australian Native	6	3	13	16	Good	Fair	Semi-mature	5 to 15	Low
131	*Eucalyptus globulus*	Blue Gum	Australian Native	19	15	115	125	Fair	Fair	Mature	5 to 15	High
132	*Corymbia maculata*	Spotted Gum	Australian Native	17	7	43	55	Good	Fair	Mature	>40	Medium
133	*Melaleuca armillaris*	Giant Honey Myrtle	Australian Native	6	3	13	16	Good	Fair	Semi-mature	5 to 15	Low
134	*Melaleuca armillaris*	Giant Honey Myrtle	Australian Native	6	3	13	16	Good	Fair	Semi-mature	5 to 15	Low
135	*Eucalyptus yarraensis*	Yarra Gum	Indigenous	9	6	38	45	Fair	Fair	Mature	>40	Medium
136	*Corymbia citriodora*	Lemon-scented Gum	Australian Native	6	2	11	14	Good	Good	Immature	>40	Low
137	*Melaleuca armillaris*	Giant Honey Myrtle	Australian Native	5	9	39.43 [20, 21, 17, 13, 16]	45	Good	Poor	Mature	5 to 15	Low
138	*Melaleuca armillaris*	Giant Honey Myrtle	Australian Native	4	2	7	8	Good	Good	Immature	5 to 15	Low
139	*Eucalyptus globulus*	Blue Gum	Australian Native	9	10	90.93 [45, 40, 40, 38, 40]	110	Fair	Poor	Mature	5 to 15	Medium
140	*Melaleuca armillaris*	Giant Honey Myrtle	Australian Native	6	3	13	16	Good	Fair	Semi-mature	5 to 15	Low
141	*Corymbia maculata*	Spotted Gum	Australian Native	15	12	63	70	Good	Fair	Mature	15 to 40	Medium
142	*Melaleuca armillaris*	Giant Honey Myrtle	Australian Native	6	3	13	16	Good	Fair	Semi-mature	5 to 15	Low
143	*Melaleuca armillaris*	Giant Honey Myrtle	Australian Native	4	4	15	18	Good	Fair	Mature	5 to 15	Low
144	*Melaleuca armillaris*	Giant Honey Myrtle	Australian Native	6	8	34.54 [22, 22, 15]	37	Fair	Poor	Mature	5 to 15	Low
145	*Corymbia maculata*	Spotted Gum	Australian Native	14	14	66.26 [33, 30, 49]	68	Good	Fair	Mature	>40	Medium
146	*Eucalyptus viminalis*	Manna Gum	Indigenous	15	5	43.01 [25, 35]	55	Fair	Fair	Mature	15 to 40	Third Party Ownership
147	*Eucalyptus viminalis*	Manna Gum	Indigenous	17	14	80	95	Good	Good	Mature	>40	Third Party Ownership
183	*Corymbia citriodora*	Lemon-scented Gum	Australian Native	5	1	6	8	Good	Good	Immature	>40	Third Party Ownership

10 Appendix 3: NRZ and SRZ Details

Table 7: NRZ and SRZ details of assessed trees (AS4970 2025)

Tree ID	*Genus Species*	Common Name	SRZ radius (m) AS4970	NRZ radius (m) AS4970	NRZ Area AS 4970 (m2)
1	*Eucalyptus radiata*	Narrow-leaved Peppermint	3.01	8.85	246.057
2	*Photinia xfraseri*	Chinese Hawthorn	2.37	5.31	88.581
3	*Corymbia ficifolia*	Flowering Gum	1.5	2	12.566
4	*Pittosporum undulatum*	Sweet Pittosporum	2.08	3.6	40.715
5	*Melaleuca armillaris*	Giant Honey Myrtle	2.41	5.55	96.769
6	*Melaleuca armillaris*	Giant Honey Myrtle	2.25	4.08	52.296
7	*Photinia xfraseri*	Chinese Hawthorn	1.5	2	12.566
8	*Corymbia ficifolia*	Flowering Gum	1.85	2.64	21.896
9	*Photinia xfraseri*	Chinese Hawthorn	1.53	2	12.566
10	*Photinia xfraseri*	Chinese Hawthorn	1.65	2	12.566
11	*Corymbia ficifolia*	Flowering Gum	2.05	3.22	32.573
12	*Photinia xfraseri*	Chinese Hawthorn	1.79	2.31	16.764
13	*Photinia xfraseri*	Chinese Hawthorn	1.79	2.17	14.793
14	*Corymbia ficifolia*	Flowering Gum	2.02	3.24	32.979
15	*Quercus palustris*	Pin Oak	1.79	2.28	16.331
16	*Photinia xfraseri*	Chinese Hawthorn	1.82	2.11	13.987
17	*Corymbia ficifolia*	Flowering Gum	2.47	5.16	83.647
18	*Corymbia ficifolia*	Flowering Gum	2.05	3.36	35.467
19	*Acer negundo*	Box Elder	2.61	6.57	135.607
20	*Corymbia maculata*	Spotted Gum	3.08	8.88	247.728
21	*Syzygium paniculatum*	Magenta Cherry	1.5	2	12.566
22	*Salix chilensis*	Chilean Willow	2.37	5.31	88.581
23	*Liquidambar styraciflua*	Liquidamber	2.08	3.48	38.046
24	*Corymbia maculata*	Spotted Gum	1.75	2.31	16.764
25	*Eucalyptus mannifera*	Brittle Gum	3.01	8.66	235.606
26	*Melaleuca armillaris*	Giant Honey Myrtle	2.88	6.73	142.292
27	*Melaleuca armillaris*	Giant Honey Myrtle	2.53	5.62	99.225
28	*Eucalyptus kitsoniana*	Gippsland Mallee	2.47	5.28	87.583
29	*Eucalyptus botryoides*	Southern Mahogany	3.62	13.2	547.391
30	*Melaleuca armillaris*	Giant Honey Myrtle	2.93	7.84	193.1
31	*Corymbia maculata*	Spotted Gum	2.81	6.84	146.981
32	*Eucalyptus botryoides*	Southern Mahogany	1.85	2.21	15.344
33	*Eucalyptus leucoxylon*	Yellow Gum	2.57	5.64	99.933
34	*Eucalyptus botryoides*	Southern Mahogany	3.17	9.24	268.222
35	*Grevillea robusta*	Silky Oak	2.47	5.04	79.801
36	*Eucalyptus tereticornis*	Forest Red Gum	3.01	8.04	203.078
37	*Pittosporum undulatum*	Sweet Pittosporum	1.65	2.1	13.854
38	*Eucalyptus cinerea*	Mealy Stringybark	3.09	8.49	226.446
39	*Ligustrum lucidum*	Privet	1.75	2.1	13.854
40	*Melia azedarach*	White Cedar	2.74	6.74	142.715
41	*Pittosporum undulatum*	Sweet Pittosporum	1.5	2	12.566
42	*Ligustrum lucidum*	Privet	1.82	2.6	21.237
43	*Pittosporum undulatum*	Sweet Pittosporum	1.5	2	12.566
44	*Eucalyptus botryoides*	Southern Mahogany	2	2.64	21.896
45	*Pittosporum undulatum*	Sweet Pittosporum	1.65	2	12.566
46	*Eucalyptus botryoides*	Southern Mahogany	1.68	2	12.566
47	*Eucalyptus cinerea*	Mealy Stringybark	3.17	9.84	304.187
48	*Ligustrum lucidum*	Privet	1.53	2	12.566
49	*Prunus persica*	Peach/Nectarine	1.82	2.76	23.931
50	*Pittosporum undulatum*	Sweet Pittosporum	1.5	2	12.566
51	*Acacia mearnsii*	Black Wattle	2.02	3.12	30.582

Tree ID	*Genus Species*	Common Name	SRZ radius (m)	NRZ radius (m)	NRZ Area AS 4970 (m2)
52	*Corymbia maculata*	Spotted Gum	2.93	8.28	215.383
53	*Syzygium paniculatum*	Magenta Cherry	2.34	4.47	62.772
54	*Prunus persica*	Peach/Nectarine	1.5	2	12.566
55	*Melaleuca armillaris*	Giant Honey Myrtle	2.3	3.6	40.715
56	*Prunus persica*	Peach/Nectarine	1.5	2	12.566
57	*Eucalyptus cinerea*	Mealy Stringybark	2.76	6.67	139.766
58	*Corymbia maculata*	Spotted Gum	2.63	6.89	149.138
59	*xCuprocyparis leylandii*	Leyland Cypress	2.25	4.44	61.932
60	*xCuprocyparis leylandii*	Leyland Cypress	1.91	2.96	27.525
61	*xCuprocyparis leylandii*	Leyland Cypress	1.88	2.4	18.096
62	*Eucalyptus botryoides*	Southern Mahogany	2.57	5.88	108.619
63	*xCuprocyparis leylandii*	Leyland Cypress	1.68	2	12.566
64	*Eucalyptus cinerea*	Mealy Stringybark	2.93	8.16	209.185
65	*xCuprocyparis leylandii*	Leyland Cypress	1.68	2	12.566
66	*Juglans nigra*	Black Walnut	2.25	4.2	55.418
67	*Corymbia maculata*	Spotted Gum	2.93	8.04	203.078
68	*Eucalyptus globulus*	Blue Gum	3.63	14.16	629.907
69	*Acacia longifolia*	Sallow Wattle	1.68	2	12.566
70	*Olea europaea*	European Olive	1.65	2	12.566
71	*Araucaria heterophylla*	Norfolk Island Pine	1.5	2	12.566
72	*Eucalyptus cinerea*	Mealy Stringybark	3.09	10.21	327.492
73	*Juglans nigra*	Black Walnut	2.13	3.36	35.467
74	*Corymbia maculata*	Spotted Gum	3.09	8.88	247.728
75	*Araucaria heterophylla*	Norfolk Island Pine	1.5	2	12.566
76	*Eucalyptus cinerea*	Mealy Stringybark	1.5	2	12.566
77	*Eucalyptus globulus*	Blue Gum	1.5	2	12.566
78	*Pittosporum undulatum*	Sweet Pittosporum	1.61	2	12.566
79	*Eucalyptus cinerea*	Mealy Stringybark	3.38	11.5	415.476
80	*Eucalyptus cinerea*	Mealy Stringybark	1.5	2	12.566
81	*Araucaria heterophylla*	Norfolk Island Pine	1.68	2	12.566
82	*Eucalyptus botryoides*	Southern Mahogany	1.5	2	12.566
83	*Eucalyptus botryoides*	Southern Mahogany	2.57	6	113.097
84	*Castanea sativa*	Sweet Chestnut	1.53	2	12.566
85	*Eucalyptus botryoides*	Southern Mahogany	1.72	2.04	13.074
86	*Eucalyptus globulus*	Blue Gum	2.76	6.6	136.848
87	*Eucalyptus cinerea*	Mealy Stringybark	3.09	8.83	244.947
88	*Melaleuca armillaris*	Giant Honey Myrtle	2.3	4.77	71.48
89	*Corymbia maculata*	Spotted Gum	1.5	2	12.566
90	*Corymbia maculata*	Spotted Gum	2.97	8.16	209.185
91	*Eucalyptus globulus*	Blue Gum	3.17	9.96	311.651
92	*Melaleuca armillaris*	Giant Honey Myrtle	1.57	2	12.566
93	*Corymbia maculata*	Spotted Gum	2.05	3.36	35.467
94	*Acacia mearnsii*	Black Wattle	1.85	2.74	23.586
95	*Corymbia maculata*	Spotted Gum	2.76	5.87	108.25
96	*Eucalyptus leucoxylon*	Yellow Gum	2.57	5.76	104.231
97	*Melaleuca armillaris*	Giant Honey Myrtle	1.53	2	12.566
98	*Corymbia maculata*	Spotted Gum	2.98	8.08	205.103
99	*Corymbia maculata*	Spotted Gum	1.82	2.4	18.096
100	*Eucalyptus globulus*	Blue Gum	1.88	3	28.274
101	*Acacia dealbata*	Silver Wattle	1.61	2	12.566
102	*Melaleuca armillaris*	Giant Honey Myrtle	1.53	2	12.566
103	*Melaleuca armillaris*	Giant Honey Myrtle	1.53	2	12.566
104	*Melaleuca armillaris*	Giant Honey Myrtle	1.53	2	12.566
105	*Melaleuca armillaris*	Giant Honey Myrtle	1.53	2	12.566
106	*Corymbia citriodora*	Lemon-scented Gum	2.37	4.2	55.418
107	*Melaleuca armillaris*	Giant Honey Myrtle	1.53	2	12.566

Tree ID	*Genus Species*	Common Name	SRZ radius (m) AS4970	NRZ radius (m) AS4970	NRZ Area AS 4970 (m2)
108	*Melaleuca armillaris*	Giant Honey Myrtle	1.53	2	12.566
109	*Melaleuca armillaris*	Giant Honey Myrtle	1.53	2	12.566
110	*Melaleuca armillaris*	Giant Honey Myrtle	1.53	2	12.566
111	*Melaleuca armillaris*	Giant Honey Myrtle	1.53	2	12.566
112	*Melaleuca armillaris*	Giant Honey Myrtle	1.53	2	12.566
113	*Eucalyptus botryoides*	Southern Mahogany	1.61	2	12.566
114	*Corymbia citriodora*	Lemon-scented Gum	2.45	4.56	65.325
115	*Eucalyptus leucoxylon*	Yellow Gum	1.85	2.64	21.896
116	*Melaleuca armillaris*	Giant Honey Myrtle	1.53	2	12.566
117	*Corymbia maculata*	Spotted Gum	2.3	4.86	74.203
118	*Corymbia maculata*	Spotted Gum	3.57	12.96	527.667
119	*Melaleuca armillaris*	Giant Honey Myrtle	1.53	2	12.566
120	*Melaleuca armillaris*	Giant Honey Myrtle	2.1	3.35	35.257
121	*Melaleuca armillaris*	Giant Honey Myrtle	1.53	2	12.566
122	*Melaleuca armillaris*	Giant Honey Myrtle	1.53	2	12.566
123	*Melaleuca armillaris*	Giant Honey Myrtle	1.53	2	12.566
124	*Melaleuca armillaris*	Giant Honey Myrtle	1.53	2	12.566
125	*Melaleuca armillaris*	Giant Honey Myrtle	1.53	2	12.566
126	*Melaleuca armillaris*	Giant Honey Myrtle	1.53	2	12.566
127	*Melaleuca armillaris*	Giant Honey Myrtle	2.25	4.2	55.418
128	*Melaleuca armillaris*	Giant Honey Myrtle	1.53	2	12.566
129	*Melaleuca armillaris*	Giant Honey Myrtle	1.5	2	12.566
130	*Melaleuca armillaris*	Giant Honey Myrtle	1.53	2	12.566
131	*Eucalyptus globulus*	Blue Gum	3.63	13.8	598.285
132	*Corymbia maculata*	Spotted Gum	2.57	5.16	83.647
133	*Melaleuca armillaris*	Giant Honey Myrtle	1.53	2	12.566
134	*Melaleuca armillaris*	Giant Honey Myrtle	1.53	2	12.566
135	*Eucalyptus yarraensis*	Yarra Gum	2.37	4.56	65.325
136	*Corymbia citriodora*	Lemon-scented Gum	1.5	2	12.566
137	*Melaleuca armillaris*	Giant Honey Myrtle	2.37	4.73	70.287
138	*Melaleuca armillaris*	Giant Honey Myrtle	1.5	2	12.566
139	*Eucalyptus globulus*	Blue Gum	3.44	10.91	373.938
140	*Melaleuca armillaris*	Giant Honey Myrtle	1.53	2	12.566
141	*Corymbia maculata*	Spotted Gum	2.85	7.56	179.553
142	*Melaleuca armillaris*	Giant Honey Myrtle	1.53	2	12.566
143	*Melaleuca armillaris*	Giant Honey Myrtle	1.61	2	12.566
144	*Melaleuca armillaris*	Giant Honey Myrtle	2.18	4.14	53.846
145	*Corymbia maculata*	Spotted Gum	2.81	7.95	198.557
146	*Eucalyptus viminalis*	Manna Gum	2.57	5.16	83.647
147	*Eucalyptus viminalis*	Manna Gum	3.24	9.6	289.529
183	*Corymbia citriodora*	Lemon-scented Gum	1.5	2	12.566

11 Appendix 4: NRZ, SRZ and Encroachment Map

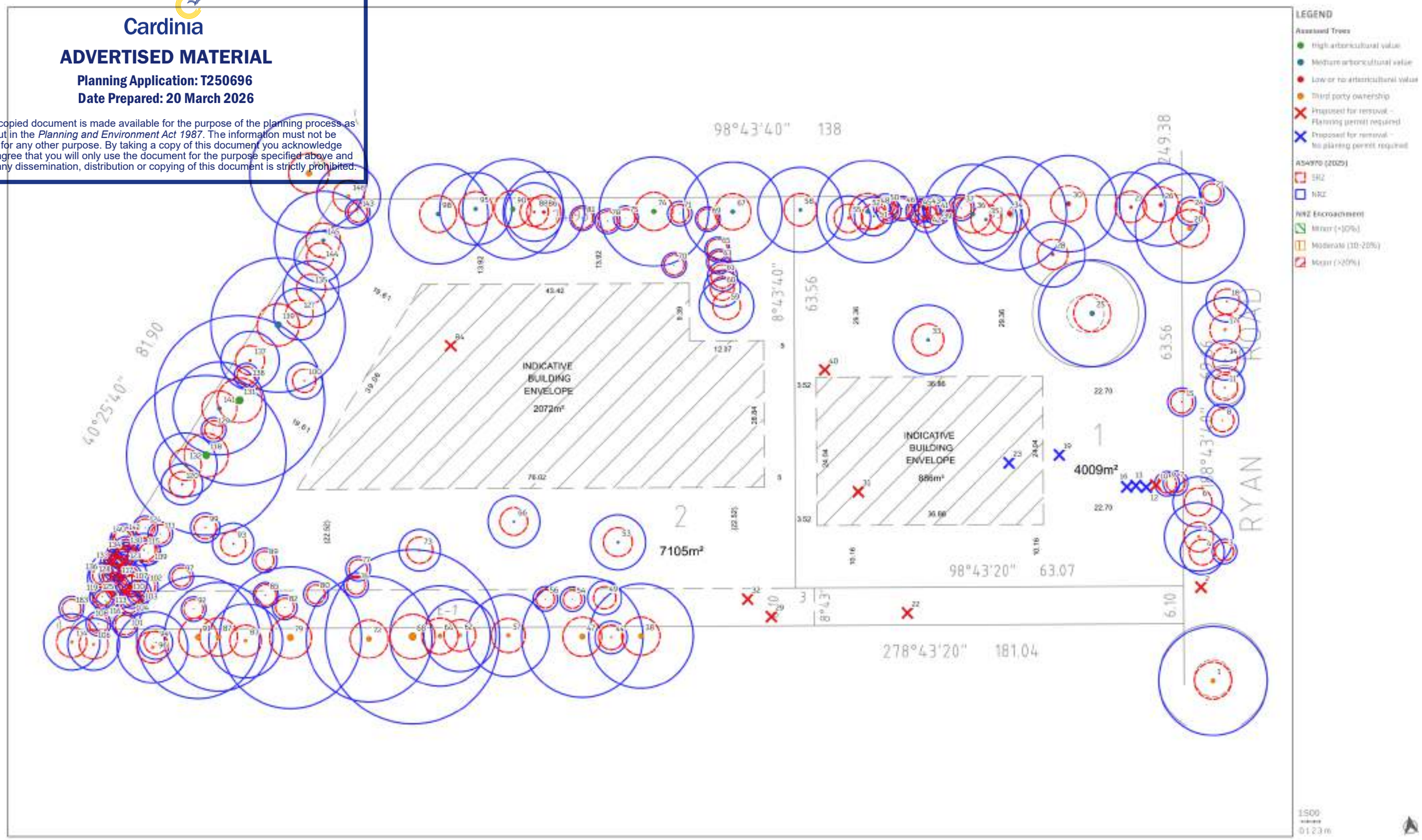

Figure 3: NRZ, SRZ and Encroachment Map

12 Appendix 5: Tree Photos

Tree ID: 1

Tree ID: 2

Tree ID: 3

Tree ID: 4

Tree ID: 5

Tree ID: 6

Tree ID: 7

Tree ID: 8

Tree ID: 13

Tree ID: 14

Tree ID: 15

Tree ID: 16

Tree ID: 17

Tree ID: 18

Tree ID: 19

Tree ID: 20

Tree ID: Z1

Tree ID: Z2

Tree ID: Z3

Tree ID: Z4

Tree ID: 25

Tree ID: 26

Tree ID: 27

Tree ID: 28

Tree ID: 29

Tree ID: 30

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Tree ID: 93

Tree ID: 94

Tree ID: 95

Tree ID: 96

Tree ID: 97, 102, 103, 104, 105, 107, 108, 109, 110, 111, 112, 116, 119, 121, 122, 123, 124, 125, 126, 128, 130, 133, 134, 140, 142

Tree ID: 98

Tree ID: 99

Tree ID: 100

Tree ID: 101

Tree ID: 106

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Tree ID: 114

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Tree ID: 120

Tree ID: 127

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Tree ID: 131

Tree ID: 132

Tree ID: 135

Tree ID: 136

Tree ID: 137

Tree ID: 138

Tree ID: 139

Tree ID: 141

Tree ID: 143

Tree ID: 144

Tree ID: 145

Tree ID: 146

Tree ID: 147

Tree ID: 183

13 Appendix 6: Data Definitions

DSH (Diameter at Standard Height) is measured at 1.4 m above ground level or calculated from the total stem area if the tree was multi-stemmed at 1.4m above ground level in accordance with AS 4970 (2025).

DAB (Diameter at Base) is measured just above the root collar of a tree in accordance with AS 4970 (2025)

Health summarises qualitative observations of canopy density, overall vigour and vitality made in the field:

- Good - Canopy is visually dense with less than 10% dieback and shows no, or only very minor nutrient deficiencies, pest and disease presence or stress–induced epicormic growth.
- Fair - Canopy is of average density, consists of between 10-30% dieback and shows a minor, or occasionally moderate, level of nutrient deficiency, pest and disease presence or stress-induced epicormic growth.
- Poor - Canopy is visually sparse, consists of more than 30% dieback and typically has significant nutrient deficiency, pest and disease presence or stress induced epicormic growth.
- Dead – No indication the tree is alive

Structure summarises qualitative observations of tree structure and stability made in the field:

- Good - The tree's form is optimal for the species. Typically trees of 'Good' structure have no or only very minor trunk leans or canopy asymmetry. These trees have parts that are not structurally compromised by decay, cracks, or other structural faults. Structural failure of these trees is only likely only under strong and unusual weather events
- Fair - The tree's structure includes minor structural defects that do not typically fail in light or moderate weather events. Typically trees of 'Fair' structure have minor trunk leans or slightly asymmetric canopies. These trees are likely to have parts that are partly compromised by decay or structural defects such as included bark.
- Poor - The tree's structure includes major structural defects. Failure of these trees is considered possible under light or moderate weather events. Typically trees of 'Poor' structure have major trunk leans or heavily asymmetric canopies. These trees are likely to have parts that are heavily compromised by decay or structural defects such as included bark.

Maturity summarises the life stage of the tree.

- Juvenile – The tree is in approximately the first 10% of its expected lifespan in its current environment
- Semi-mature – Tree is 10%-20% through its expected lifespan in its current environment and has not yet reached its mature dimensions.
- Mature – The tree is through 20%-90% of its expected lifespan in its current environment.
- Over-mature – The tree is through approximately 90% of its expected lifespan in its current environment

ULE (Useful Life Expectancy) indicates the anticipated remaining years of lifespan of the tree in its existing surroundings. The tree's lifespan is the time that it will continue to provide amenity value without undue risk or hazard and with a reasonable amount of maintenance.

Significance indicates the importance a tree may have on a respective site. The following descriptors are used to derive this value (adapted from IACA 2010):

High -

- Tree is good condition and good vigour
- The tree has a form typical for the species
- The tree is a remnant specimen or is rare or uncommon in the local area or of botanical interest or substantial age
- The tree is listed as a heritage item or threatened species or listed on a municipal significant tree register
- The tree is visually prominent and visible from a considerable distance when viewed from most directions due to its size and scale. The tree makes a positive contribution to the local amenity.
- The tree supports social or cultural sentiments or spiritual associations or has commemorative values
- The tree is appropriate to the site conditions

Medium -

- The tree is in fair condition and good or low vigour
- The tree has form typical or atypical of the species
- The tree is a planted locally indigenous taxa or a common species within the area.
- The tree is visible from surrounding properties, although not visually prominent as partially obstructed by other vegetation or buildings when viewed from a public space. The tree provides a moderate contribution to the amenity and character of the local area
- The tree is often partially restricted by above or below ground influences and/or resources.

Low –

- The is in fair condition and good or low vigour
- The tree has form atypical of the species.
- The tree is not visible or is partly visible from surrounding properties due to obstructions.
- The tree provides a minor contribution or has a negative impact on landscape amenity or character of the local area.
- The tree is a juvenile specimen that can easily be replaced.
- The trees growth is severely restricted by above or below ground influences and/or resources.
- The tree has a feature that has potential to become structurally unsound.
- The tree is a listed as a noxious or environmental weed under state, federal or municipal policy

Dead/Irreversible Decline -

- The tree is structurally unsound or unstable
- The tree is dead or in irreversible decline

Third Party Ownership

- The tree is located on adjoining land to the assessment.

A tree is to meet several or all the criteria in a category to be classified in that group

Arboricultural Value is a calculated value indicating the merit of the tree for retention through any nearby developments. It is a qualitative combination of the trees ULE and Significance Values (Table 8).

Table 8: Matrix for the calculation of Arboricultural Value

		Significance Value				
		High	**Medium**	**Low**	**Dead/Irreversible Decline**	**Third Party Ownership**
ULE	**>40 years**	High	Medium	Low	Low	Third Party Ownership
	15-40 years	High	Medium	Low	Low	Third Party Ownership
	5-15 years	High	Medium	Low	None	Third Party Ownership
	<5 years	Medium	Low	None	None	Third Party Ownership
	0 years	Low	None	None	None	Third Party Ownership

- High –Trees attributed a 'High' arboricultural value are generally of strong visual amenity and significant in the landscape. The utmost level of consideration should be given for the retention of these trees throughout development activities and/or nearby disturbance
- Medium – Trees attributed a 'Medium' arboricultural value are of moderate amenity value and have been attributed some value in the landscape. Trees attributed a 'Medium' arboricultural value should be retained and designed around during developments or nearby disturbance. If retention is not possible for these trees, removal and replacement can be often considered as an acceptable compromise.
- Low – Trees attributed a Low arboricultural value are of poor arboricultural merit. Removal and replacement is an acceptable compromise if designing around these trees is not possible.
- None – Trees attributed an arboricultural value of none have no arboricultural merit. Removal is usually acceptable or required for these trees.
- Third Party Ownership – The tree is located on adjacent land to the assessment. It is assumed that the owner of the tree attributes it a High arboricultural value and requires its retention in the landscape.

14 Appendix 7: Structural Root Zone and Notional Root Zone Overview

14.1 Structural Root Zone (SRZ)

The SRZ is an indication of the area surrounding the base of a tree that is required for its stability. AS 4970 (2025) provides a method to calculate the SRZ of trees: The SRZ is calculated as

$$(DAB \times 50)^{0.42} \times 0.64$$

For grass like trees such as palms or tree ferns; SRZs are not calculated.

14.2 Notional Root Zone (NRZ)

The NRZ is an indication of the area surrounding the base of a tree that is required for its viability. AS 4970 (2025) provides a method for calculating the standard area of NRZ's. For all broadleaf trees, the radius of the NRZ is calculated as:

$$12 * DSH$$

For grass like trees such as palms or tree ferns; NRZs are calculated as 2m in radius.

Dead trees are attributed a NRZ of the same size as their SRZ as only their stability can be protected and not their vigour

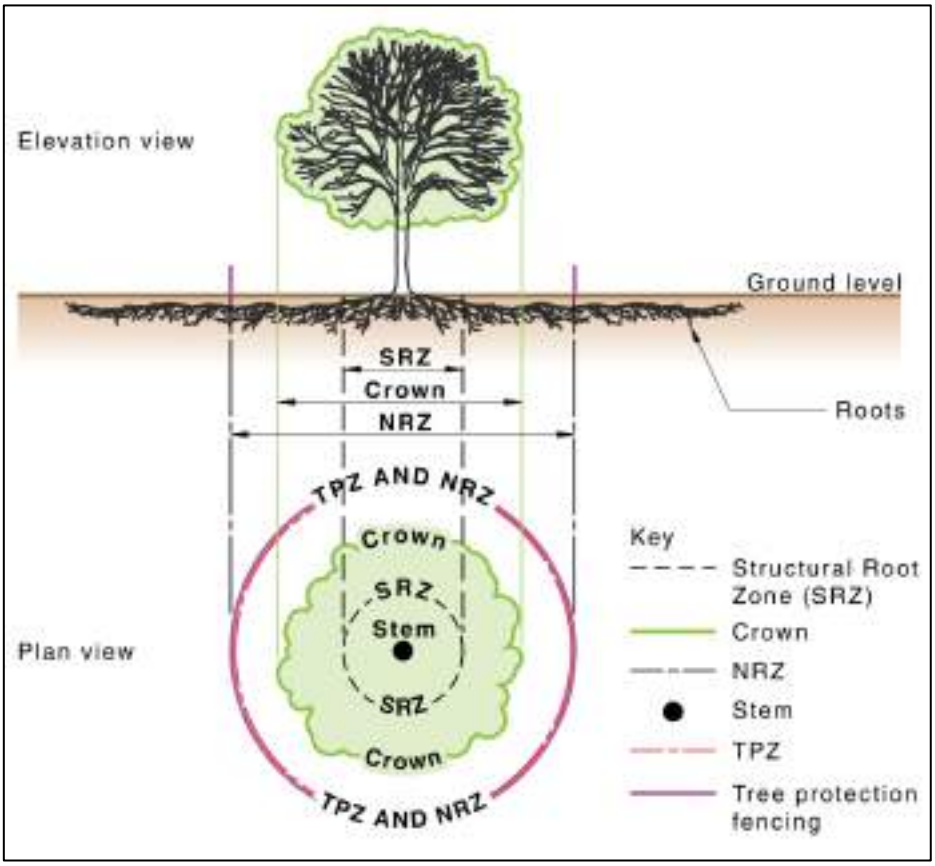

Figure 4: Diagram of NRZ and SRZ (AS 4970 2025)

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19 February 2026

Job No: 26001

Cardinia City Council

Engineering Development Team,

23 Ryan Road, Pakenham
Stormwater Strategy Report

The proposed development at 23 Ryan Road, Pakenham features a two lot subdivision; namely 'Lot 1 – Proposed Development' and 'Lot 2 – Balance Land'.

This report outlines the proposed stormwater strategy for the above-mentioned development. This strategy has been prepared with the requirements of the Cardinia City Council and relevant local council guidelines.

It provides an overview of the functional drainage layout, management of both minor and major storm events, on-site detention requirements, and the overall objectives of protecting downstream assets and minimising flood risk.

Objectives:

The key objectives of the stormwater strategy are to:

- Manage stormwater runoff from the development in accordance with best practice and Council requirements
- Limit post-development peak discharge to pre-development levels for the 10% Annual Exceedance Probability (AEP) storm event.
- Provide safe and effective conveyance of minor flows (20% AEP) within the underground drainage system
- Ensure major flows (1% AEP) are managed via safe overland flow paths
- Incorporate appropriate Water Sensitive Urban Design (WSUD) elements to improve runoff quality prior to discharge.

Site Context:

The subject site comprises a proposed two-lot subdivision with frontage to Ryan Road. The land is currently being reconfigured and sub-divided to create;

- Lot 1 (Front Lot): A 4009 sqm parcel located at the front of the site, which is subject to a current planning permit application for the development of a childcare centre

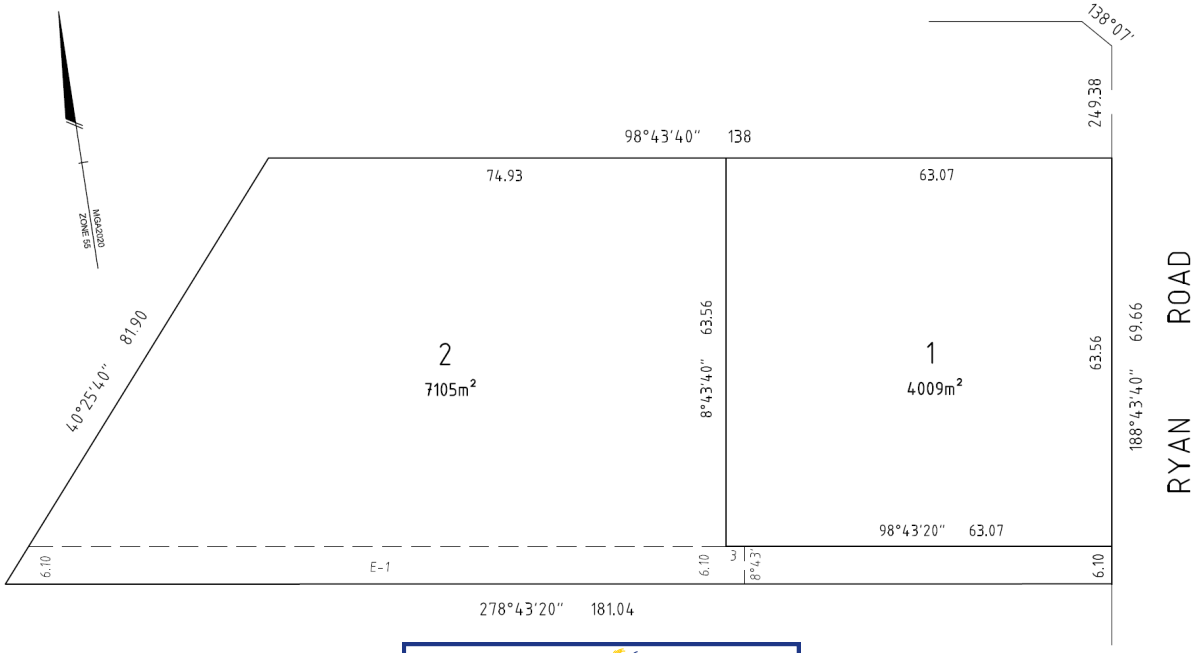
- Lot 2 (Rear Lot): A 7105 sqm balance of the land positioned to the rear of Lot 1. The ultimate land use of Lot 2 has not yet been determined

Vehicular access to the subdivision is provided from Ryan Road. Lot 2 is serviced via a private driveway that runs along the southern boundary of the site, enabling access from the frontage through to the rear allotment.

Along the rear boundary of the parent title is the Deep Creek drainage corridor. The drainage channel associated with Deep Creek is currently under construction by Melbourne Water. This regional drainage infrastructure forms the downstream receiving environment for the site and represents a significant hydraulic and servicing interface for future stormwater management.

The subdivision therefore presents a staged development context, where the front lot has a defined proposed land use, and the rear lot remains flexible pending further development intentions. The stormwater strategy must account for this staged arrangement, the proposed childcare development, the existing Council assets in Ryan Road, and the proximity of the Deep Creek drainage channel and associated Melbourne Water infrastructure.

The below figure shows the proposed arrangements for Lot 1 and Lot 2 at the subject site.



Land Liable to Flooding

A request was made to Melbourne Water to ascertain if there were any existing flooding constraints attributed to this development site. The following information was obtained by the relevant drainage authority;

'Information available at Melbourne Water indicates that the property is not subject to flooding from Melbourne Water's drainage system, based on a rainfall event which has a 1% Annual Exceedance Probability (AEP), that is, a 1% probability of being equalled or exceeded in any one year…'

'For the purposes of the Building Code of Australia – Building in Flood Hazard Areas, there is no applicable flow rate velocity associated with the above property. Melbourne Water does not have any information in relation to flow velocities associated with local Council drainage system'

This land certificate for flooding from Melbourne Water is supplied at the conclusion of this report.

A further request was made to Cardinia City Council to ascertain if there were any existing flooding constraints attributed to this development site from Council's network. The following information was obtained by the relevant drainage authority;

'Is an area that is liable to flooding within the meaning of regulation 153 - No'

This land certificate and property information certificate from Cardinia City Council is supplied at the conclusion of this report. As the proposed site is not subject to flooding requirements, the ground level finished floor level chosen will be less sensitive to potential freeboard requirements.

Overland Flow Path:

The overland flow characteristics of the site are governed by the existing topography of the parent parcel and the proposed subdivision configuration.

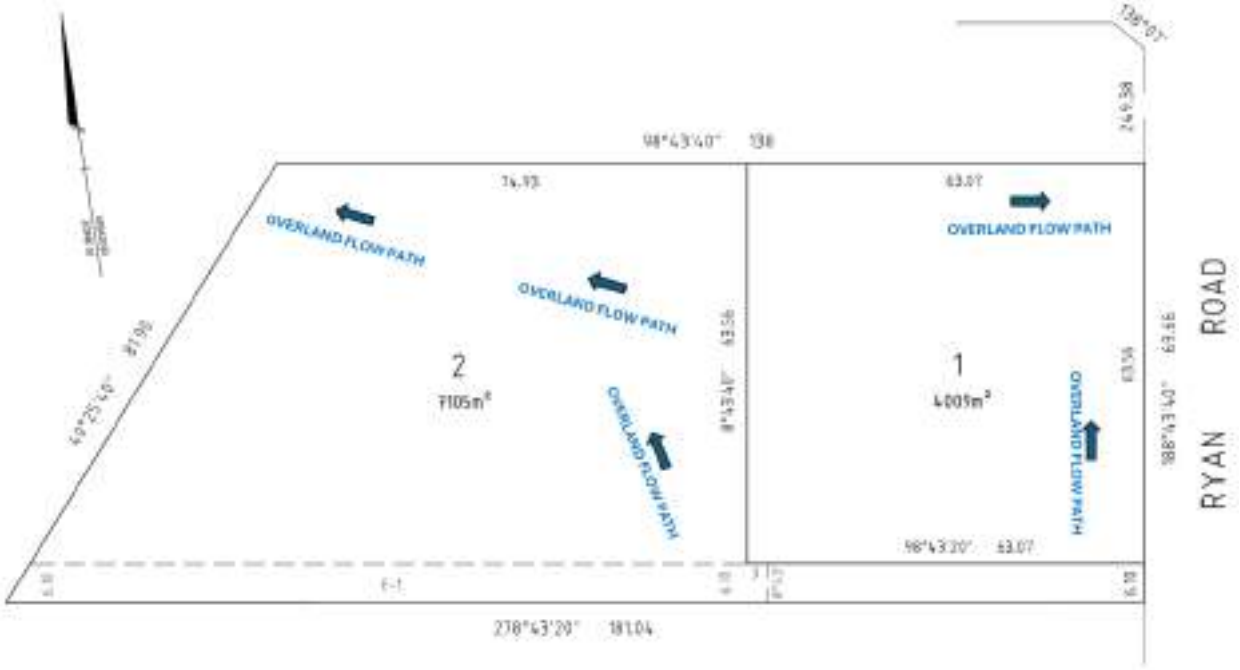
Lot 1 (Front Lot) generally falls from the southern boundary toward the northern boundary, discharging in the direction of Ryan Road. In minor rainfall events, surface flows will be captured via the formal stormwater drainage system. However, during major storm events (typically 1% AEP and above), when underground drainage systems may surcharge, overland flow is expected to travel northward across the lot and discharge to the Ryan Road carriageway. Ryan Road therefore functions as the major overland flow conveyance path for Lot 1, consistent with typical urban drainage design principles.

A discernible topographic ridge approximately midway along the parent site separates the surface drainage catchments of the front and rear portions of the land. This ridge defines the overland flow split between the two proposed lots.

Lot 2 (Rear Lot) falls generally toward the north-west corner of the site. In a high flow or surcharge scenario, overland flows from Lot 2 are expected to discharge toward the north-western boundary, ultimately directing flow toward the Deep Creek drainage channel and the adjoining recreation reserve. The rear drainage corridor therefore forms the primary major flow path for Lot 2 in extreme rainfall events.

The subdivision layout is therefore consistent with the natural topographic controls of the site, with Lot 1 discharging toward Ryan Road and Lot 2 discharging toward the Deep Creek drainage reserve in major storm conditions.

The below figure shows the generalised overland flow paths for the development site.



Legal Point of Discharge:

The determination of an appropriate Legal Point of Discharge (LPOD) is fundamental to the viability of the proposed two-lot subdivision and the orderly development of the land. This section therefore sets out, in detail, the basin upon which each lot can be provided with a compliant and functional stormwater connection consistent with Council requirements and standard urban drainage practice.

In assessing feasible LPOD locations, it is important to acknowledge several physical and statutory constraints that influence potential stormwater discharge points.

Along the northern boundary of the parent title, there are established Tree Protection Zones (TPZs) associated with retained vegetation. These TPZs restrict excavation and service installation within defined radii and therefore limit the ability to introduce new drainage infrastructure in certain portions of the northern interface.

These constraints mean that stormwater servicing must:

- Minimise disturbance within TPZ extents;
- Utilise existing or logical infrastructure interfaces where possible;
- Align with the natural topographic fall of the site.

Accordingly, the identified LPOD solutions for both Lot 1 and Lot 2 have been developed having regard to these constraints, prioritising gravity discharge and minimising environmental and statutory impacts.

Lot 1 – Front Lot

Based on preliminary servicing advice provided by Council, an existing 300 mm diameter stormwater drain is located within Ryan Road, positioned approximately 1.0 m below surface level and located behind the kerb and channel. This drain has been identified as the appropriate LPOD for Lot 1.

To formalise this connection, it is proposed that a new grated stormwater pit be constructed over the existing 300 mm diameter drain. The pit will provide:

- A compliant and maintainable point of connection;
- A defined LPOD in accordance with Council standards;
- A direct gravity discharge point from the internal drainage system.
-

The invert depth of approximately 1.0 m is considered adequate to facilitate gravity connection from the proposed childcare development, subject to detailed design confirmation at engineering stage.

Hydraulic Strategy – Lot 1

A current planning application has been lodged for a proposed childcare centre for Lot 1. Should this application be accepted and approved, the requirement of on-site detention may be requested by Council.
The proposed front development (4,009 m² site area) may, subject to local government requirements, incorporate an on-site detention (OSD) system designed in accordance with Council's stormwater management requirements.

The OSD system will:

- Limit peak discharge to pre-development levels (or Council-nominated permissible site discharge);
- Provide temporary storage for the 10% AEP storm event (or as required by Council);
- Ensure no adverse impact on the downstream Ryan Road drainage network.

By incorporating OSD, the discharge rate to the 300 mm diameter Council drain will be controlled and managed, addressing concerns regarding downstream capacity and ensuring the existing infrastructure is not overloaded.

Surface levels across Lot 1 fall toward Ryan Road, which supports a gravity-based drainage solution. In major storm events where the underground drainage network surcharges, overland flows are directed toward the Ryan Road carriageway, which functions as the major flow path. This provides an additional level of hydraulic resilience and ensures no reliance on pumped systems for primary drainage conveyance.

It is noted that small, isolated landscaped play areas may incorporate shallow surface depressions for amenity or landscape purposes. In the unlikely event that a localised low point cannot achieve direct gravity connection, a minor submersible pump arrangement may be incorporated to service that discrete area only. This would be limited in scope and does not form part of the primary site drainage strategy, which remains gravity-based.
Accordingly, Lot 1 can be confidently serviced via gravity connection to the existing 300 mm diameter drain in Ryan Road, supplemented by on-site detention to regulate peak flows.

Lot 2 – Rear Lot (Future Development)

Lot 2 represents the balance of the land and is currently undeveloped, with its ultimate land use yet to be determined. Due to its rear position, direct connection to the Ryan Road drainage infrastructure is not considered practical or desirable.

The site topography indicates that Lot 2 falls toward the north-western boundary, adjoining the Deep Creek drainage corridor and recreation reserve. The Deep Creek drainage channel, currently under construction by Melbourne Water, forms the ultimate downstream receiving environment for the broader catchment.
Given this context, the preferred servicing approach for Lot 2 is a future connection toward the Deep Creek drainage system, subject to:

- Melbourne Water approval;
- Confirmation of finished levels associated with the new drainage channel;
- Hydraulic capacity assessment at detailed design stage;
- Any required water quality treatment and retardation measures.

This approach aligns with the natural fall of the land and avoids the need for cross-lot drainage infrastructure or reliance on the Ryan Road network for the rear parcel.
It is anticipated that any future development of Lot 2 would incorporate:

- On-site detention (if required by Council or Melbourne Water);
- WSUD treatment measures in accordance with current planning policy;
- A compliant gravity discharge to the Deep Creek drainage system.

Importantly, the subdivision configuration ensures that each lot has a logical and independent drainage solution:

- **Lot 1** discharges northeast to Ryan Road;
- **Lot 2** discharges northwest toward Deep Creek.

This separation of discharge points reduces cumulative loading on any single drainage asset and addresses Council's concerns regarding the capacity of the Ryan Road infrastructure to service both lots simultaneously.

Servicing Feasibility and Council Considerations

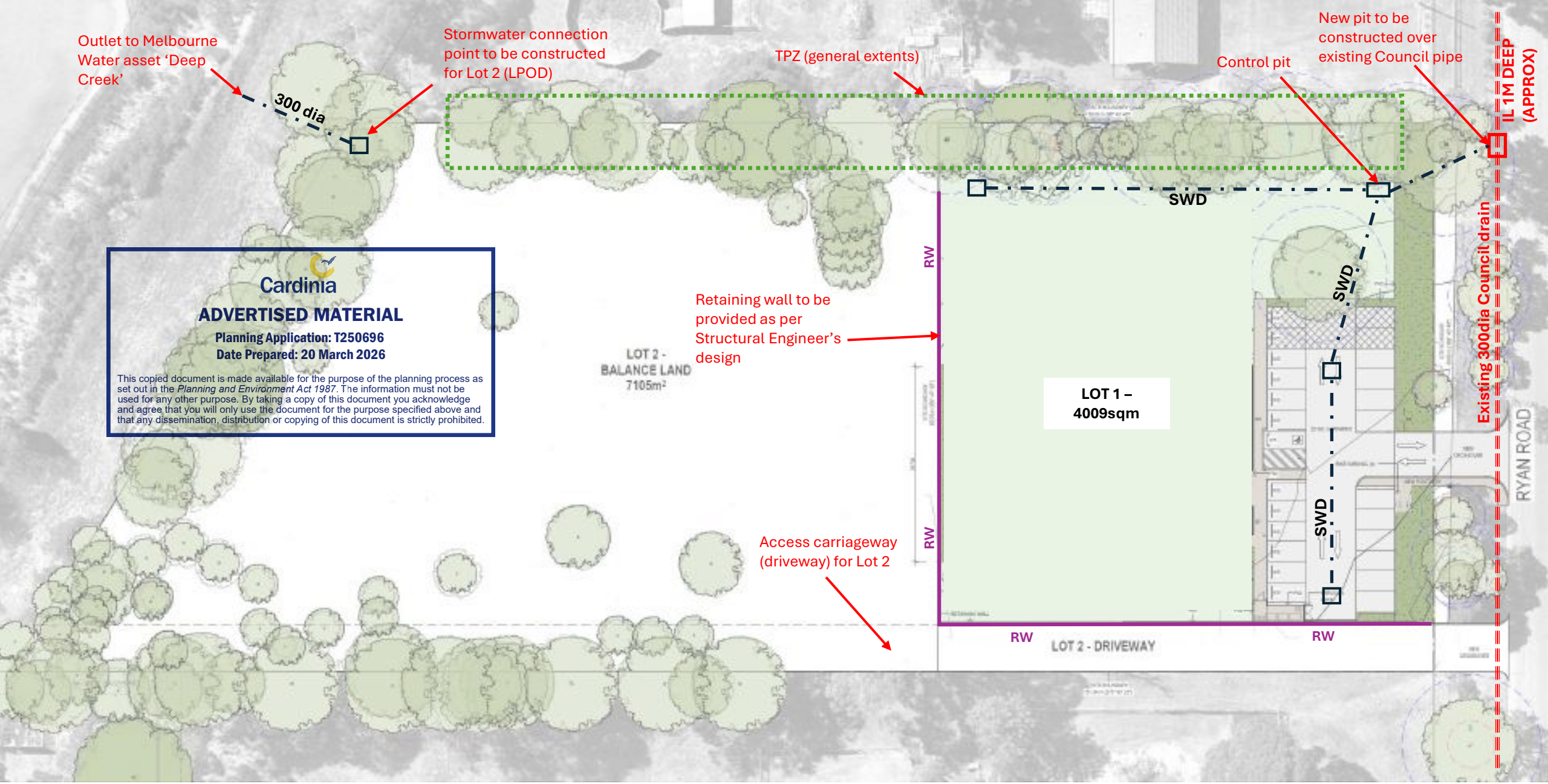
From a strategic perspective:

- The existing 300 mm diameter drain in Ryan Road provides a defined LPOD for Lot 1.
- On-site detention ensures regulated discharge and protects downstream capacity.
- Lot 2 is not proposed to rely on the Ryan Road drainage system.
- The Deep Creek drainage corridor provides a logical and hydraulically consistent future discharge path for the rear lot.
- Environmental and statutory constraints along the northern boundary have been appropriately considered in determining feasible outfall locations.

Accordingly, the subdivision can be serviced without overloading existing infrastructure and without reliance on non-standard drainage solutions.
Detailed hydraulic modelling, invert confirmations, and final connection designs will be undertaken at the engineering design stage; however, at a strategic level, there is no constraint that would prevent both lots from being appropriately serviced via compliant gravity-based drainage systems.
Yours sincerely,

[redacted]

STRUCTURES CIVIL DESIGN



Cardinia

Legal Point of Discharge and Stormwater Drainage Information Report

To: MRM Group Australia Pty Ltd

[redacted]

From: Cardinia Shire Council – Infrastructure Services

Date: 2 February 2026

Total pages: 4

Legal Point of Discharge and Stormwater Drainage Information

Pursuant to Regulation 133 of the Building Regulations 2018, please find below, stormwater drainage details and legal point of discharge for:

Property Address: Lot 3 No.23 Ryan Road, Pakenham

Property Number: 4747001300

In response to your request for legal point of discharge for this property, please see attached drawings showing existing drainage information and discharge pipe details.

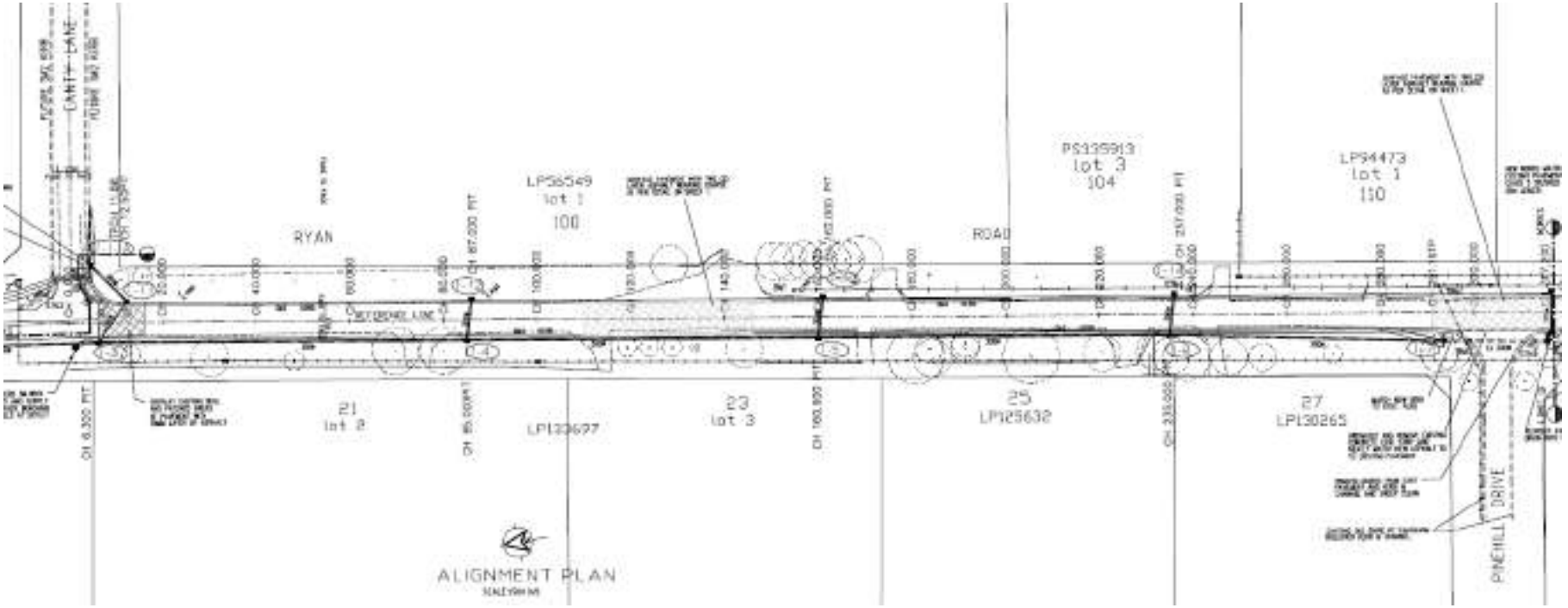
Please note however that there is potential that this drainage pipe may be replaced in the future with the upgrade of Ryan Road, for further information on what is intended with the drainage along this section of Ryan Road and possible timeframes, please contact our Development Engineer, Justin Conn, on 1300 787 624, or via email at mail@cardinia.vic.gov.au.

Regards,

Mandy Wade
Development Support Officer

Please note:

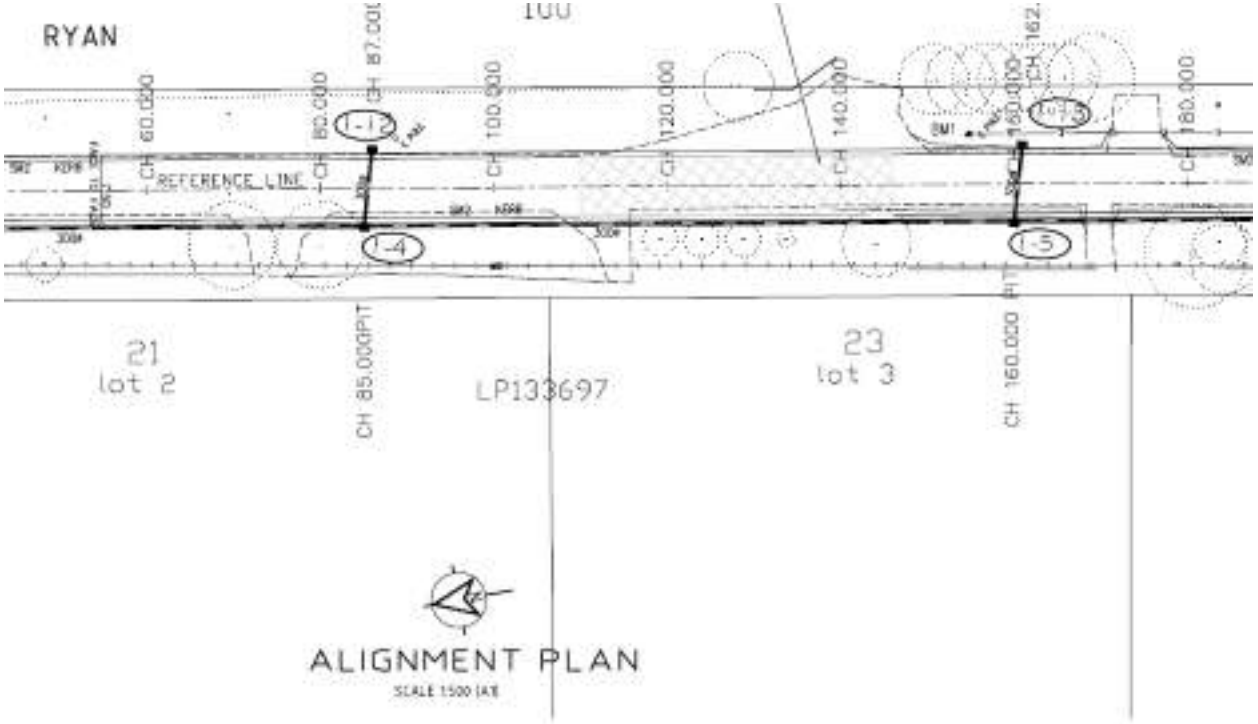
- The information contained within this report is based on the drawings provided to, and approved by, Cardinia Shire Council. Cardinia Shire Council has taken reasonable steps to ensure the accuracy and currency of this information and disclaims any liability resulting from the usage of it.
- The information contained within this report is approximate only and it is recommended that the information be verified on site, and all levels checked for discharge to the nominated point, prior to the commencement of any works.
- A Works within a Road Reserve permit is required for all connections or alterations to Council assets.
- If a Town Planning Permit is required for this site, please refer to current permit for all stormwater drainage conditions.
- Stormwater pipe offsets are not provided as a part of this response.



Cardinia Shire Council
ABN: 32 210 906 807
20 Siding Ave, Officer

PO Box 7
Pakenham 3810
(DX 81006)

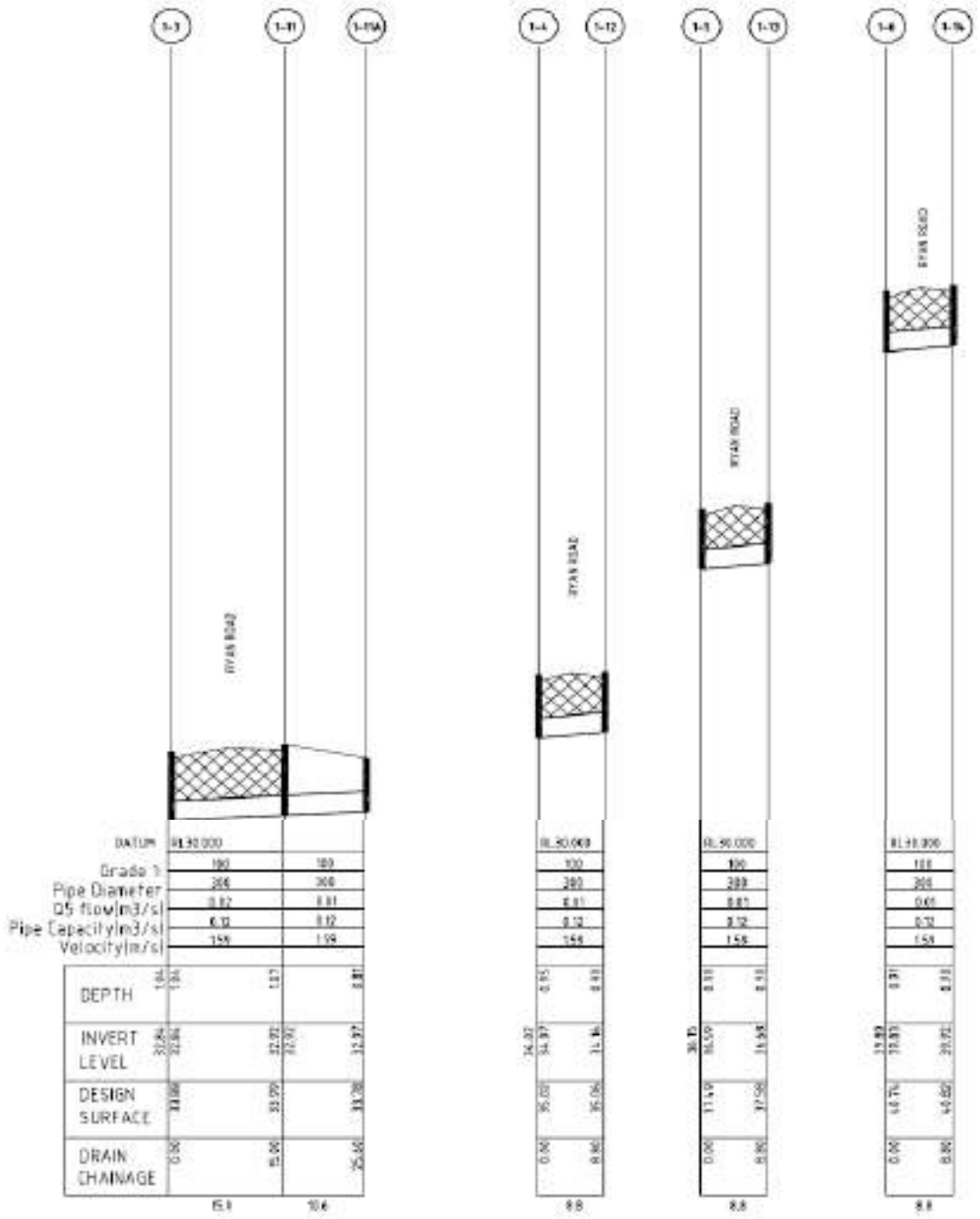
Phone: 1300 787 624
Email: mail@cardinia.vic.gov.au
Web: cardinia.vic.gov.au



ALIGNMENT PLAN

SCALE 1:500 (A3)

Pit No	Type	Internal Width (mm)	Internal Length (mm)	Outlet Diameter (mm)	Outlet Invert RL (m)	Inlet Diameter (mm)	Inlet Invert RL (m)	Pit Depth (m)	FSL (m)
1-1	MELBOURNE WATER ENDWALL	-	-			450	32.55	0.51	33.06
1-2	JUNCTION PIT	600	900	450	32.68	450	32.65	1.01	33.66
1-3	GEP	600	900	450	32.84	300 300	32.84 32.94	1.04	33.88
1-4	GEP	600	900	300	34.02	300 300	34.05 34.07	1.00	35.02
1-5	GEP	600	900	300	36.15	300 300	36.58 36.59	1.34	37.49
1-6	GEP	600	900	300	39.80	300 300	39.83 39.83	0.93	40.73
1-7	JUNCTION PIT	600	900	300	41.77	300	41.92	0.90	42.67



PROPERTY INFORMATION CERTIFICATE
Building Regulations 2018
Building Regulation 51(2)

23 January 2026
Property number: 4747001300
Your reference 79409135-021-1
Receipt number -

Michael Gough c/o LANDATA

Land (property) Address: 23 Ryan Rd, Pakenham 3810
Proposed Development -

Is the building or land in an area:	
That is liable to flooding (Reg. 153)?	**NO***
That is a likely to be subject to termite attack (Reg. 150)?	**YES**
For which BAL level has been specified in a planning scheme?	**
That is subject to significant snowfalls (Reg. 152)?	**NO**
Designated land or Designated works (Reg. 154)?	**NO***

***NOTE:** Flooding information is predominantly based on 'Planning Scheme Flood Overlays' and 'Melbourne Water Data' available, any building work proposed within 20 metres of a water course (not requiring a planning permit) should be designed to ensure that amenity and structural integrity is not impacted (further opinion may be obtained from Councils Municipal Building Surveyor).

** **NOTE**: BAL='Bushfire Attack Level', BAL's may also be provided as restrictions on title/subdivision and shall be complied with. Refer to 'Land Channel' website for information relating to regulation 155 (designated state bushfire prone areas) DELWP Vic Plan Maps

PLANNING UNIT
For planning information please complete the planning information request located on our website Planning information or advice and pay the associated fee.

COMMUNITY INFRASTRUCTURE LEVY
Community Infrastructure Levies (CIL) are financial contributions made by landowners towards locally provided infrastructure that is required to meet the future needs of the community. **CIL is applicable to new dwellings constructed within certain areas of the municipality.** Rates applicable can be found on the website and are updated on **1 July each year.**

Is the property subject to the Community Infrastructure Levy (payable by owner? NO

ASSET PROTECTION UNIT
The asset protection permits application fee and bond must both be paid, and your permit is issued **before work starts**. Please refer to our website for further details: Apply for an asset protection permit

Yours sincerely

Building Administration - For and on Behalf of **Municipal Building Surveyor**

Melbourne Water

[redacted]

Proposal: Flood level certificates
Site Location : LOT 3, 23 RYAN ROAD, PAKENHAM VIC 3810
Melbourne Water reference: MWA-1400211
Eflood reference number: 79409135
Date referred: 21/01/2026

Applicable Flood Level

Flooding may be associated with the Melbourne Water regional drainage system and/or the local Council drainage systems. Information available at Melbourne Water indicates that the property is **not subject to flooding** from Melbourne Water's drainage system, based on a rainfall event which has a 1% Annual Exceedance Probability (AEP), that is, a 1% probability of being equalled or exceeded in any one year.

To determine if a property is subject to flooding from the local Council drainage system you will need to contact the relevant Council for flood information.

For the purposes of the Building Code of Australia - Building in Flood Hazard Areas, there is no applicable flow rate velocity associated with the above property. Melbourne Water does not have any information in relation to flow velocities associated with the local Council drainage system.

Important to note

Melbourne Water provides flood advice under Section 202(2) of the Water Act 1989.

The advice provided is based on the most accurate information currently available. This information is valid for **3 months** from the date of this letter. If you are proposing to develop this land after such time, it is recommended that new advice be obtained from Melbourne Water.

Disclaimer

This letter does not constitute approval for any proposed development for planning or building.

Melbourne Water ABN 81 945 386 953
990 La Trobe Street Docklands VIC 3008
PO Box 4342 Melbourne VIC 3001 Australia
TTY 131 722 F +61 3 9679 7099
melbournewater.com.au

Melbourne Water

This certificate provides information as a general reference source only and has taken all reasonable measures to ensure that the material in this letter is as accurate as possible at the time of publication. However, Melbourne Water makes no representation and gives no warranty about the accuracy, reliability, completeness or suitability for any particular purpose of the information. To the full extent that it is able to do so in law, Melbourne Water disclaims all liability, (including liability in negligence), for losses and damages, (including indirect and consequential loss and damage), caused by or arising from anyone using or relying on the information for any purpose whatsoever.

The information provided represents the best estimates based on currently available information. This information is subject to change as new information becomes available and as further studies are carried out.

Contact us

For more information in relation to flooding or additional services that Melbourne Water can provide please visit our website.

Should you require additional general development information, please contact our Melbourne Water Customer Service Centre on 131 722

Regards,

[redacted]

Melbourne Water ABN 81 945 386 953
990 La Trobe Street Docklands VIC 3008
PO Box 4342 Melbourne VIC 3001 Australia

TTY 131 722 F +61 3 9679 7099
melbournewater.com.au

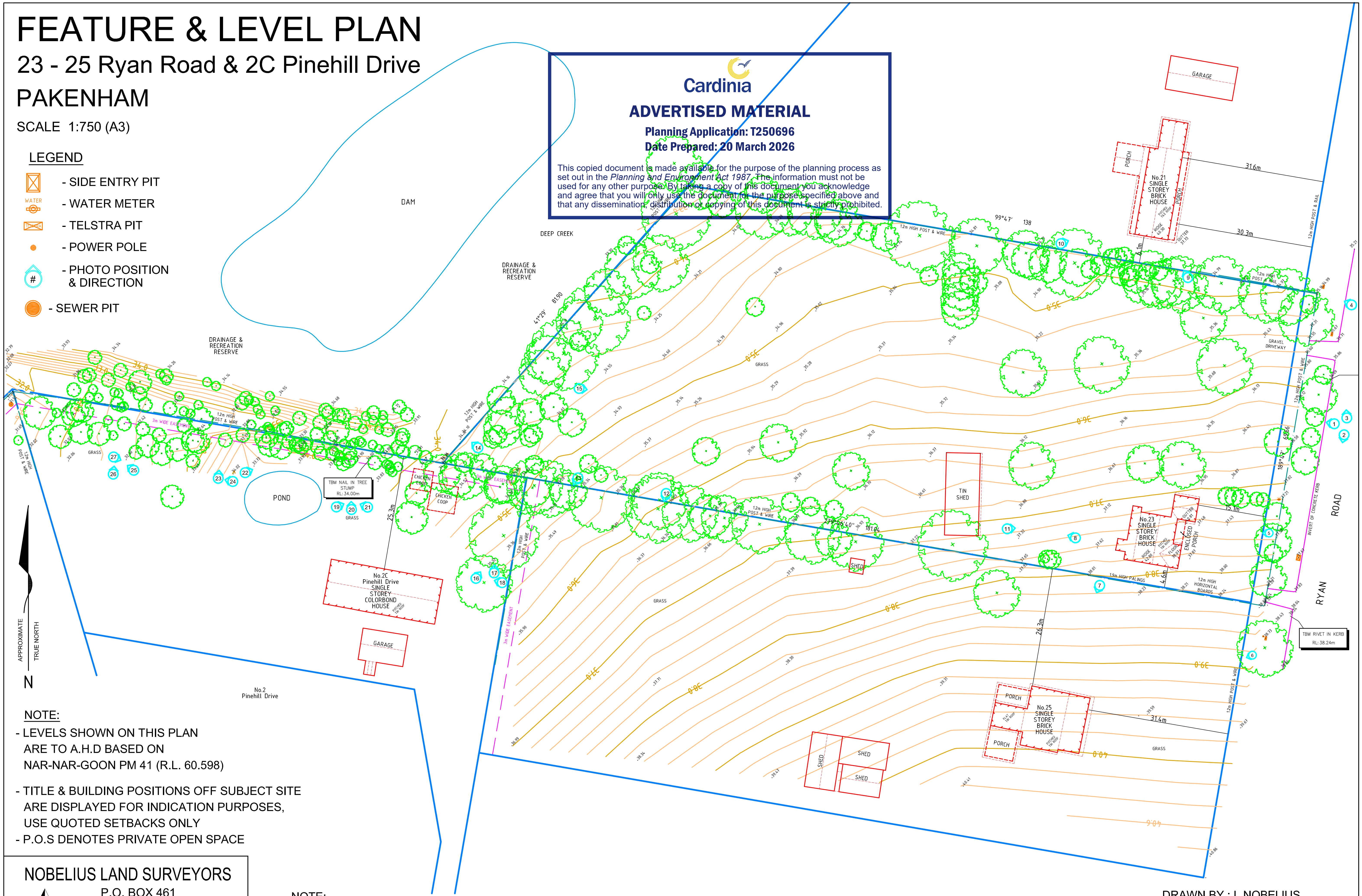
FEATURE & LEVEL PLAN

23 - 25 Ryan Road & 2C Pinehill Drive
PAKENHAM

SCALE 1:750 (A3)

LEGEND

- SIDE ENTRY PIT
- WATER METER
- TELSTRA PIT
- POWER POLE
- PHOTO POSITION & DIRECTION
- SEWER PIT



NOTE:
- LEVELS SHOWN ON THIS PLAN ARE TO A.H.D BASED ON NAR-NAR-GOON PM 41 (R.L. 60.598)
- TITLE & BUILDING POSITIONS OFF SUBJECT SITE ARE DISPLAYED FOR INDICATION PURPOSES, USE QUOTED SETBACKS ONLY
- P.O.S DENOTES PRIVATE OPEN SPACE

NOBELIUS LAND SURVEYORS
P.O. BOX 461
PAKENHAM 3810
Ph 03 5941 4112
mail@nobelius.com.au

NOTE:

THIS IS A CADASTRAL PLAN PREPARED UNDER THE SUPERVISION OF A LICENSED SURVEYOR.

DRAWN BY : L.NOBELIUS

DATE OF SURVEY : 22/04/2025

SURV. REF. NO. 21188

A3

PLAN OF SUBDIVISION

EDITION 1

PS 928678 L

LOCATION OF LAND

PARISH: Nar Nar Goon

TOWNSHIP: ---

SECTION: ---

CROWN ALLOTMENT: 38 (Pt)

CROWN PORTION: ---

TITLE REFERENCE: Vol. 9380 Fol. 435

LAST PLAN REFERENCE: Lot 3 on LP 133697

POSTAL ADDRESS: 23 Ryan Road, Pakenham 3810
(at time of subdivision)

MGA CO-ORDINATES: E: 369 620 ZONE: 55
(of approx centre of land in plan) N: 5 784 910 GDA 2020

Council Name: Cardinia Shire Council

EXPLANATORY NOTE:
WARNING: This plan is unregistered.
Alterations may be required by Council and the Registrar of Titles prior to Registration, Nobelius Land Surveyors accepts no responsibility whatsoever for any loss or damage suffered.

VESTING OF ROADS AND/OR RESERVES

IDENTIFIER	COUNCIL/BODY/PERSON
NIL	NIL

NOTATIONS

DEPTH LIMITATION: DOES NOT APPLY

SURVEY:
This plan is based on survey.

STAGING:
This is not a staged subdivision.
Planning Permit No.

This survey has been connected to permanent marks No(s). 43

In Proclaimed Survey Area No. 71

NOTATIONS

EASEMENT INFORMATION

LEGEND: A - Appurtenant Easement E - Encumbering Easement R - Encumbering Easement (Road)

Easement Reference	Purpose	Width (Metres)	Origin	Land Benefited/In Favour Of
E-1	Drainage & Sewerage	6.11	This Plan	Lot 1 on This Plan

NOBELIUS LAND SURVEYORS
P.O. BOX 461
PAKENHAM 3810
Ph 03 5941 4112
mail@nobelius.com.au

SURVEYORS FILE REF: 21188

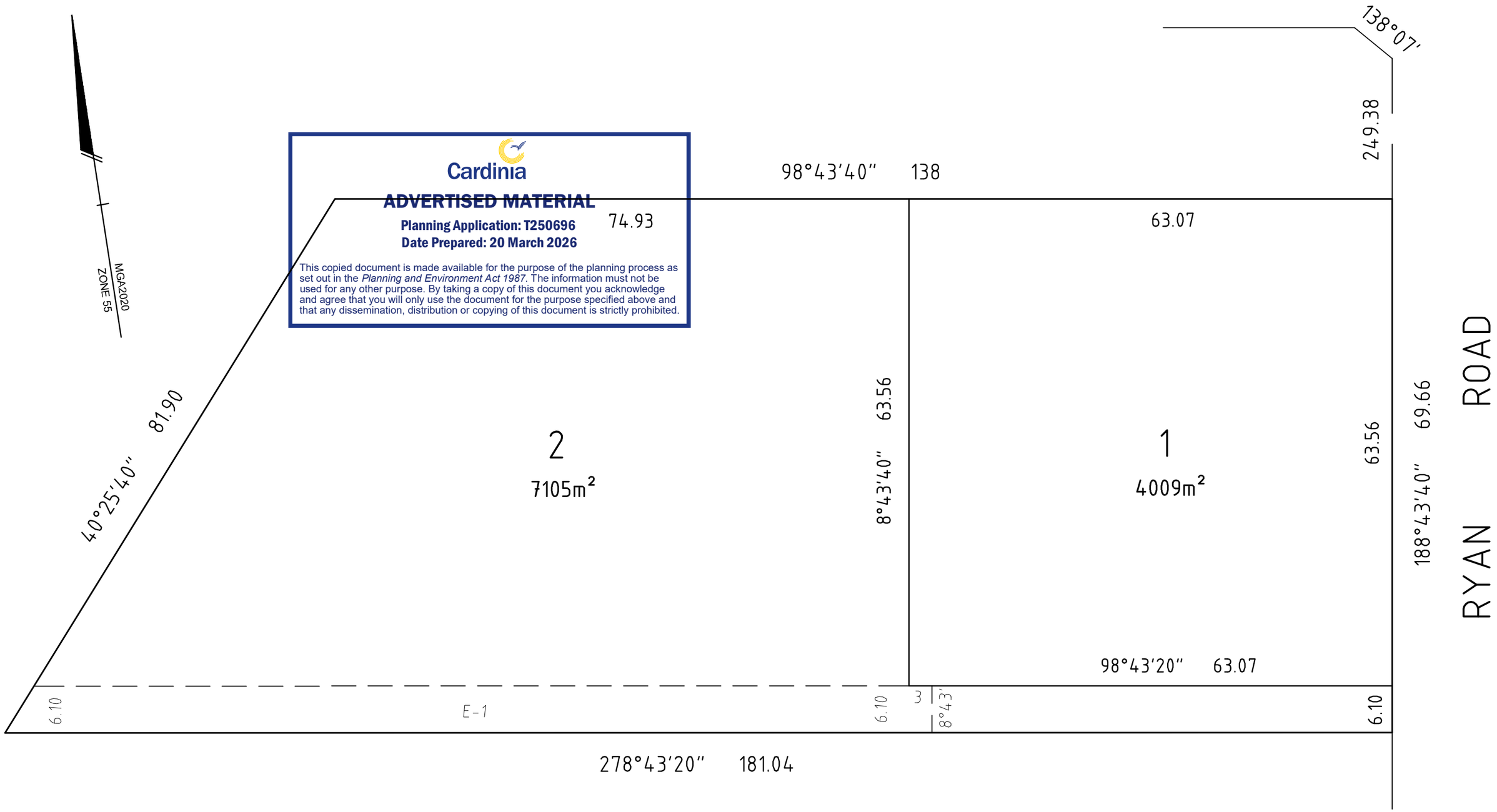
ORIGINAL SHEET SIZE: A3

LICENSED SURVEYOR: B. S. NOBELIUS

VERSION 2

PS 928678 L

WARNING: This plan is unregistered.
See Sheet 1 for Explanatory Note



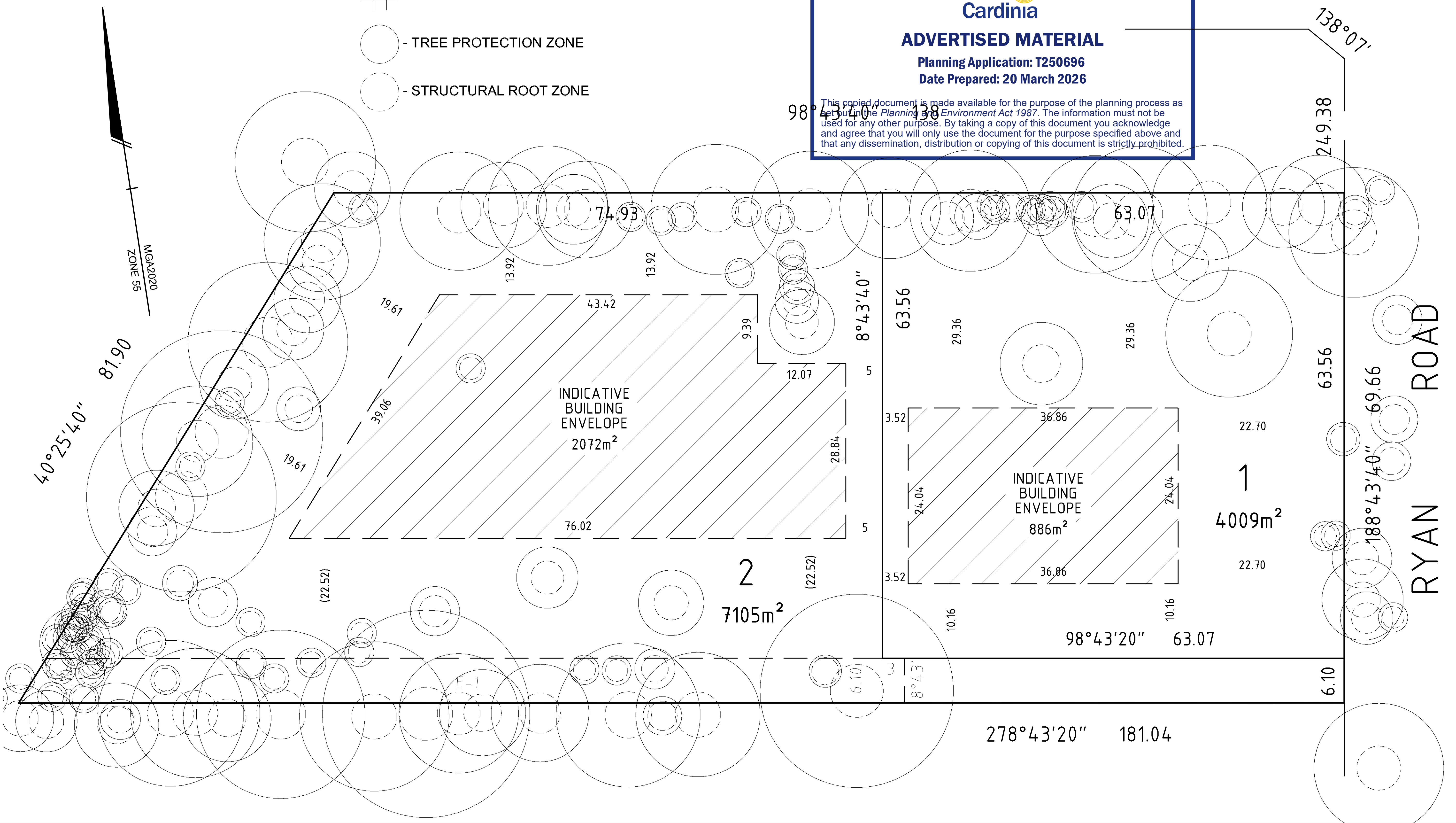
NOBELIUS LAND SURVEYORS
P.O. BOX 461
PAKENHAM 3810
Ph 03 5941 4112
mail@nobelius.com.au

SCALE 1:500	5 0 5 10 15 20 LENGTHS ARE IN METRES	ORIGINAL SHEET SIZE: A3	SHEET 2
LICENSED SURVEYOR: B. S. NOBELIUS VERSION 2			

PS 928678 L

- INDICATIVE BUILDING ENVELOPE (diagonal hatching)
- INDICATIVE BUILDING ENVELOPE (cross hatching)
- TREE PROTECTION ZONE
- STRUCTURAL ROOT ZONE

WARNING: This plan is unregistered.
See Sheet 1 for Explanatory Note



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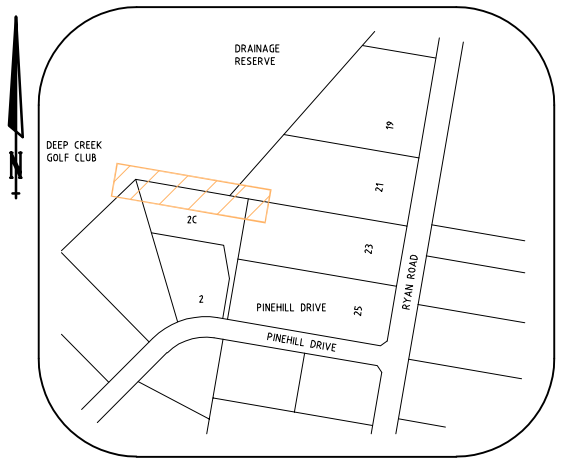
SCALE 1:500	5 0 5 10 15 20 LENGTHS ARE IN METRES	ORIGINAL SHEET SIZE: A3	SHEET 3

LICENSED SURVEYOR: B. S. NOBELIUS

VERSION 2



LOCALITY PLAN

SCALE: NOT TO SCALE
MELWAYS REF : 318 B8

Schedule 7: Drawing Schedule

Drawing No.	Sheet No.	Title
11PD2613/ 01	1	NOTES, SCHEDULE & LOCALITY PLAN
11PD2613/ 02	2	DETAIL PLAN
11PD2613/ 03	3	LONGITUDINAL SECTION & MAINTENANCE HOLE DETAIL

General Notes:

1. Only contractors accredited by South East Water to SC1 and SC7 shall be eligible to construct these works.
2. Only products approved and catalogued by the Water Agency shall be used.
3. Works must be to constructed according to the MRWA Sewerage Standards and MRWA edition of the WSAA Sewerage code of Australia WSA 02-2014-3.1.
4. The design consultant is responsible for the design and coordination of the works. Any problem arising during construction shall be directed to the consultant.

Survey, Set Out and Asset Recording

5. All contours and levels are in metres to the Australian Height Datum (A.H.D.) GDA 2020 Zone 55
6. All co-ordinates shown are to Map Grid of Australia (MGA).
7. Chainages shown on detail plans are discontinuous at maintenance structures.
   Chainages shown on long section sheets are continuous.
8. Coordinates are to sewer line intersection point unless otherwise shown.
9. Before commencement of work, the Contractor must complete a level check between all TBM's to verify level values.
10. TBM's and control points are to be maintained and protected at all times during construction.
    Should any marks be disturbed, the contractor will immediately notify the consultant to arrange re-instatement at the contractors expense.

Property Connections

11. Number of lots to be sewered: 2 lots
12. All property connections to be DN100 unless otherwise indicated.
13. Branch tie distance shown on detail plans are from approved subdivision survey pegs. Branch ties for future lots are shown as a chainage. (Ch) Distance is from the downstream sewer structure.
14. Invert level of the property connection point is shown opposite the branch position.
15. Property Connections requiring Boundary Traps will be designated with "BT" at the end of the Property Connection Type description.

Bends:

16. Detectable markers shall be installed above all bends which are not directly connected to Maintenance Structures. Refer Figure 104B-B.

Earthworks and Retaining Walls:

17. In areas subject to earthworks, construction of sewers shall not commence until earthworks has been completed unless written approval has been given by the Water Agency.

Embedment

18. Embedment shall be Type A (refer MRWA-S-202) unless otherwise specified on the Longitudinal section.

Backfill

19. Selection and compaction of trench backfill material shall be in accordance with the Water Agency adopted version of MRWA specification no 04-03.1 and Council requirements.

20. Refer to Longitudinal Section drawings for backfill requirements.

Compaction Testing

21. Test results shall be provided to the Superintendent prior to practical completion / acceptance of works.
22. The Contractor is required to undertake all testing of fill compaction in accordance with the Water Agency adopted version of the MRWA Backfill Specification 04-03.1

Safety:

23. Prior to commencement of works on site, the Contractor must ensure that all matters relating to the Occupational Health and Safety Act 2004 and Occupational Health and Safety regulations 2017, have been and will be complied with.

Work on Live Sewers:

24. All works on live sewers must be carried out by a Water Agency accredited contractor.
25. All existing sewers must be plugged in accordance with Water Agency requirements to stop gas emissions prior to any connections being made.
26. To enable connections to live assets or any work on live assets, the contractor shall submit the appropriate forms to the Superintendent at least 3 working days prior to any works on live sewers.
27. The Contractor is not permitted to break into an existing live pipeline, enter a live sewer or remove the cover to a live maintenance structure unless authorised by the Water Agency.

Testing:

28. The Contractor is to give a minimum of two (2) days notice to the superintendent and Water Agency prior to the testing being undertaken. Testing is to be undertaken in the presence of superintendent.

Cultural Heritage Requirements

29. Not applicable

Environmental Management Plan:

30. On commencement of construction works the contractor must comply with the recommendations of the EPA publication "Construction Techniques for Sediment Pollution Control" (publication no 275 1991).
31. Prior to the commencement of work, the contractor is to submit a site environmental management plan to Melbourne Water.
32. All trees and vegetation are to be protected unless otherwise indicated for removal.
    The extent of any vegetation removal shall be confirmed on site with the Superintendent and local council prior to commencement, and in accordance with any planning permits. Any removal shall be documented.
33. All areas containing creek vegetation, trees and revegetated areas near the construction zone are to be fenced off during the works with secure and highly visible material such as para-webbing fencing.
34. Ensure all machinery, equipment and/or footwear entering the site is weed and pathogen free.

Other:

35. The Contractor is to provide DPM Consulting Group with CCTV data for the sewer line and confirmation of the constructed grade as a part of the acceptance testing. The use of directional drilling is at the contractor's risk.

Schedule 1: New Pipe

Pipe Size	Pipe Type	Length (m)	Pipe Class	Standard
DN100	UPVC-DWV	-	SN10	WSA PS 230
DN180	PE-100 POLYETHYLENE, BUTT WELDED JOINTS	117	SN>8	WSA PS 230

Schedule 2: Property Connections

Connection Type	Type 1a	Type 1b	Type 2	Type 4a	Type 4b	Type S	Type 4S	Type B	Type 4B	Jump Up Flexible Couplings, ie: "F"
Quantities	1	-	-	-	-	1	-	1	-	-

Schedule 3: Service Offsets and Locations:

Street	NDW		Water		Comms		Elec.		Lighting	
-	-	-	-	-	-	-	-	-	-	-

Schedule 4: **Maintenance Structures** (other than Maintenance Holes)
Inspection Shafts (IS), Maintenance Shafts (MS) and Maintenance Chambers (MC):

Maintenance Structure ID	Type - (IS/MS/MC)	Cover Class	Depth to Invert (mm)	Shaft Connections
-	-	-	-	-

NOTE: All MS and MC are to have four way bases. Cap unused legs.

Schedule 5: Water Agency Granted Dispensations

ID	Location	Asset / Feature	Description of Dispensation Accepted
1	E4	STRUCTURE SPACING	INCREASED STRUCTURE SPACING AT LINE EMB17A-10 TO DPM-1
2	LOT 23	LOT CONTROL	PARTIAL LOT CONTROL OF LOT 23
3	D3-E6	SEWER	DIRECTIONAL DRILLING

Schedule 6: Maintenance Holes

Maintenance Hole ID	MH Type (Any /Plastic / Made to Order)	MH Top Type (Conical/Flat)	Cover Class	Internal Diameter (mm)	Min. Wall Thickness (if Concrete)	Depth Lowest Invert	Drops	Ladder (L) Step Irons (S) Landing (Ld)	Corrosion Protection	Shaft Re-inforcement	Comments (Offsets / Details)
EMB17A-10	Ex	Conical	-	1050	-	2200	-	-	-	-	Refer to base detail
DPM-1	Any	Conical	B	1050	150	2580	1 x DN100	S	-	-	-

Schedule 7: Water Seals, Boundary Traps and Syphons

Structure Type	Boundary Trap	Water Seals	Syphons
Quantity	3	-	-

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WARNING

BEWARE OF UNDERGROUND SERVICES

THE LOCATION OF UNDERGROUND SERVICES ARE APPROXIMATE ONLY AND THEIR EXACT POSITION SHOULD BE PROVEN ON SITE. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.

FOR CONSTRUCTION

REV	DESCRIPTION	DATE	APPROVED
C2	CONSTRUCTION METHODOLOGY AMENDED	26/08/2025	T.P.
C1	PLANS CHECKED	23/06/2025	T.P.
P1	PRELIMINARY ISSUE	19/05/2025	T.P.

DESIGNED J. Beveridge DATE: 19/05/2025
DRAWN J. Beveridge DATE: 19/05/2025
CHECKED T. Parsons DATE: 23/06/2025

PROJECT NUMBER 479912
AUTHORISED V. Sokiovski DATE: 24/06/2025
REGISTERED ENGINEER NAME: J. Beveridge PE REG. NO: PE0006668 DATE: 24/06/2025

DPM Ref: 3246

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DPM Consulting Group

SOUTH EAST WATER
CARDINIA SHIRE COUNCIL
23 & 25 RYAN ROAD, PAKENHAM
SEWER DESIGN PLANS
NOTES, SCHEDULE & LOCALITY PLAN

SCALE: N.T.S.
SHEET: 1 OF 3
DRAWING No.: 11PD2613/01
REV C2