Notice of Application for a Planning Permit

Cardinia

The land affected by the application is located at:	L1 TP103786 16-18 Henry Road, Bunyip VIC 3815
The application is for a permit to:	Subdivision of the land into two (2) lots, removal of native vegetation and removal of vegetation

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

32.03-3	Subdivide land
42.02-2	Remove, destroy or lop vegetation
43.02-3	Subdivide land
52.17-1	Remove, destroy or lop native vegetation

APPLICATION DETAILS

The applicant for the permit is:	M.J.Reddie Surveys Pty Ltd
Application number:	T240658

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:	29 August 2025

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.

Application is here

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

Documents Uploaded

Date	Type	Filename
05-12-2024	Subdivision Plan	24-10-219 (PS V1) Model ().pdf
05-12-2024	Explanatory Letter	Form 1.pdf
05-12-2024	Additional Document	24-10-219 (SA) Model (1).pdf
05-12-2024	Additional Document	[redacted]- Plannning Permit Application.pdf
05-12-2024	Additional Document	Clause 56.pdf
05-12-2024	Additional Document	[redacted]
05-12-2024	Additional Document	Title (Full).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

Site User	[redacted] M.J.Reddie Surveys Pty Ltd	PO BOX 268, berwick VIC 3806	W: 9707-4117 M: 0438-538-870 E: luke@reddiesurveys.com.au
Submission Date	05 December 2024 - 03:46:PM		

Declaration

☑ By ticking this checkbox, I, [redacted] declare that all the information in this application is true and correct; and the Applicant and/or Owner (if not myself) has been notified of the application.

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

CARDINIA

Office Use Only

Application No.: Date Lodged: / /

Application for
Planning Permit

Planning Enquiries

Phone: 03 5945 4310

Web: http://www.cardinia.vic.gov.au

If you need help to complete this form, read How to complete the Application for Planning Permit form.

⚠ Any material submitted with this application, including plans and personal information, will be made available for public viewing, including electronically, and copies may be made for interested parties for the purpose of enabling consideration and review as part of a planning process under the *Planning and Environment Act 1987*. If you have any concerns, please contact Council's planning department.

⚠ **Questions marked with an asterisk (*) are mandatory and must be completed.**

⚠ **If the space provided on the form is insufficient, attach a separate sheet.**

Clear Form

The Land

(1) Address of the land. Complete the Street Address and one of the Formal Land Descriptions.

Street Address *

Unit No.: | St. No.: 16-18 | St. Name: Henry Rd

Suburb/Locality: Bunyip | Postcode: 3815

Formal Land Description *
Complete either A or B.

⚠ This information can be found on the certificate of title.

A Lot No.: 1 ○ Lodged Plan ● Title Plan ○ Plan of Subdivision No.: 103786V

OR

B Crown Allotment No.: | Section No.:

Parish/Township Name:

If this application relates to more than one address, please click this button and enter relevant details. Add Address

The Proposal

⚠ You must give full details of your proposal and attach the information required to assess the application. Insufficient or unclear information will delay your application.

(2) **For what use, development or other matter do you require a permit?** *

If you need help about the proposal, read: *How to Complete the Application for Planning Permit Form*

2 Lot Subdivision

Provide additional information on the proposal, including: plans and elevations; any information required by the planning scheme, requested by Council or outlined in a Council planning permit checklist; and if required, a description of the likely effect of the proposal.

(3) **Estimated cost of development for which the permit is required** *

Cost $ ⚠ You may be required to verify this estimate.

Insert '0' if no development is proposed (eg. change of use, subdivision, removal of covenant, liquor licence)

Existing Conditions

(4) **Describe how the land is used and developed now** *

eg. vacant, three dwellings, medical centre with two practitioners, licensed restaurant with 80 seats, grazi

PRIVATE RESIDENCE ON ACERAGE

Provide a plan of the existing conditions. Photos are also helpful.

Title Information

5 Encumbrances on title *

If you need help about the title, read: How to complete the Application for Planning Permit form

Does the proposal breach, in any way, an encumbrance on title such as a restrictrive covenant, section 173 agreement or other obligation such as an easement or building envelope?

- ◯ Yes. (If 'yes' contact Council for advice on how to proceed before continuing with this application.)
- ◯ No
- ◯ Not applicable (no such encumbrance applies).

Provide a full, current copy of the title for each individual parcel of land forming the subject site. (The title includes: the covering 'register search statement', the title diagram and the associated title documents, known as 'instruments', eg. restrictive covenants.)

Applicant and Owner Details

6 Provide details of the applicant and the owner of the land.

Applicant *

The person who wants the permit.

Name:

Title: | First Name: [redacted] | Surnam[redacted]

Organisation (if applicable):

Postal Address: | If it is a P.O. Box, enter the details here:

Unit No.: | St. No.: | St. Name: Po Box 268

Suburb/Locality: Berwick | State: Vic | Postcode: 3806

Where the preferred contact person for the application is different from the applicant, provide the details of that person.

Contact person's details * — Same as applicant (if so, go to 'contact information') ☐

Name:

Title: | First Name: | Surname:

Organisation (if applicable):

Postal Address: | If it is a P.O. Box, enter the details here:

Unit No.: | St. No.: | St. Name:

Suburb/Locality: | State: | Postcode:

*Please provide at least one contact phone number **

Contact information

Business Phone: 97074117 | Email: mjr@reddiesurveys.com

Mobile Phone: 0411609565 | Fax: 97074428

Owner *

The person or organisation who owns the land

Where the owner is different from the applicant, provide the details of that person or organisation.

[redacted]

Declaration

7 **This form must be signed by the applicant ***

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

I declare that I am the applicant; and that all the information in this application is true and correct; and the owner (if not myself) has been notified of the permit application.

Signature: | Date: day / month / year

Need help with the Application?

If you need help to complete this form, read How to complete the Application for Planning Permit form
General information about the planning process is available at www.dpcd.vic.gov.au/planning

Contact Council's planning department to discuss the specific requirements for this application and obtain a planning permit checklist. Insufficient or unclear information may delay your application.

(8) **Has there been a pre-application meeting with a Council planning officer?**

○ No ○ Yes

Checklist

(9) **Have you:**

☐ Filled in the form completely?

☐ Paid or included the application fee?

⚠ Most applications require a fee to be paid. Contact Council to

☑ Provided all necessary supporting information and documents?

- ☐ A full, current copy of title information for each individual parcel of land forming the subject site
- ☐ A plan of existing conditions.
- ☐ Plans showing the layout and details of the proposal
- ☐ Any information required by the planning scheme, requested by council or outlined in a council planning permit checklist.
- ☐ If required, a description of the likely effect of the proposal (eg traffic, noise, environmental impacts).

☐ Completed the relevant Council planning permit checklist?

☐ Signed the declaration (section 7)?

Lodgement

Lodge the completed and signed form, the fee payment and all documents with:

Cardinia Shire Council
PO Box 7 Pakenham VIC 3810

Contact information:

Telephone: 1300 787 624
Fax: 61 03 5941 3784
Email: mail@cardinia.vic.gov.au
DX: 81006

Deliver application in person, by fax, or by post:

Print Form

Make sure you deliver any required supporting information and necessary payment when you deliver this form to the above mentioned address. This is usually your local council but can sometimes be the Minister for Planning or another body.

Save Form:

Save Form To Your Computer

You can save this application form to your computer to complete or review later or email it to others to complete relevant sections.

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

VOLUME 09649 FOLIO 421

Security no : 124120425355D
Produced 05/12/2024 03:36 PM

LAND DESCRIPTION

Lot 1 on Title Plan 103786V.
PARENT TITLES :
Volume 05377 Folio 289 Volume 09622 Folio 468
Created by instrument L916988W 02/10/1985

REGISTERED PROPRIETOR

[redacted]

ENCUMBRANCES, CAVEATS AND NOTICES

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 set out under DIAGRAM LOCATION below.

DIAGRAM LOCATION

SEE TP103786V FOR FURTHER DETAILS AND BOUNDARIES

ACTIVITY IN THE LAST 125 DAYS

NUMBER		STATUS	DATE
AY545222L (E)	CONV PCT & NOM ECT TO LC	Completed	30/10/2024
AY545233F (E)	DISCHARGE OF MORTGAGE	Registered	30/10/2024

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

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

Street Address: 16-18 HENRY ROAD BUNYIP VIC 3815

ADMINISTRATIVE NOTICES

NIL

[redacted]

DOCUMENT END

Department of Environment, Land, Water & Planning

Electronic Instrument Statement

The Victorian Government acknowledges the Traditional Owners of Victoria and pays respects to their ongoing connection to their Country, History and Culture. The Victorian Government extends this respect to their Elders, past, present and emerging.

Produced: 05/12/2024 03:36:17 PM

Dealing Number: AY545222L

Status: Completed
Date and Time Lodged: 30/10/2024 10:47:05 AM
Responsible Subscriber: WISEWOULD MAHONY LAWYERS
Customer Code: 17843A
Reference:

APPLICATION TO CONVERT AND NOMINATE PAPER CERTIFICATE OF TITLE TO AN ELECTRONIC INSTRUMENT

The Subscriber authorises the conversion of the following paper Certificate(s) of Title to electronic Certificate(s) of Title and their nomination to the instruments contained in the Lodgement Case shown below:

Certificate(s) of Title:
Volume 9649 Folio 421

Lodgement Case ID: 1248878782

Following the registration of the instruments in the Lodgement Case, do not return the eCT Control to the nominating Subscriber

Subscriber's Certification:

1. The Certifier has:
(a) retrieved; and
(b) either securely destroyed or made invalid,
the (duplicate) certificate(s) of title for the folio(s) of the Register listed in this Registry Instrument or Document.

Signed by:
[redacted]
(for WISEWOULD MAHONY LAWYERS)
Customer Code: 17843A
Dated: 30 October 2024

File Notes:
NIL

Secure Electronic Registries Victoria (SERV), Level 13, 697 Collins Street Docklands 3008
Locked bag 20005, Melbourne 3001, DX 210189
ABN 86 627 986 396

Department of Environment, Land, Water & Planning

Electronic Instrument Statement

This is a representation of the digitally signed Electronic Instrument or Document certified by Land Use Victoria.

Statement End.

Secure Electronic Registries Victoria (SERV), Level 13, 697 Collins Street Docklands 3008
Locked bag 20005, Melbourne 3001, DX 210189
ABN 86 627 986 396

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	**TP103786V**
Number of Pages (excluding this cover sheet)	**1**
Document Assembled	**05/12/2024 15:36**

TITLE PLAN		EDITION 1	TP 103786V

Location of Land

Parish: BUNYIP
Township: BUNYIP
Section 7
Crown Allotment: 3 (PT)
Crown Portion

Last Plan Reference:
Derived From: VOL 9649 FOL 421
Depth Limitation: 15.24 m

Notations

ANY REFERENCE TO MAP IN THE TEXT MEANS THE DIAGRAM SHOWN ON THIS TITLE PLAN

Description of Land / Easement Information

THIS PLAN HAS BEEN PREPARED FOR THE LAND REGISTRY, LAND VICTORIA, FOR TITLE DIAGRAM PURPOSES AS PART OF THE LAND TITLES AUTOMATION PROJECT
COMPILED: 10/08/1999
VERIFIED: AA

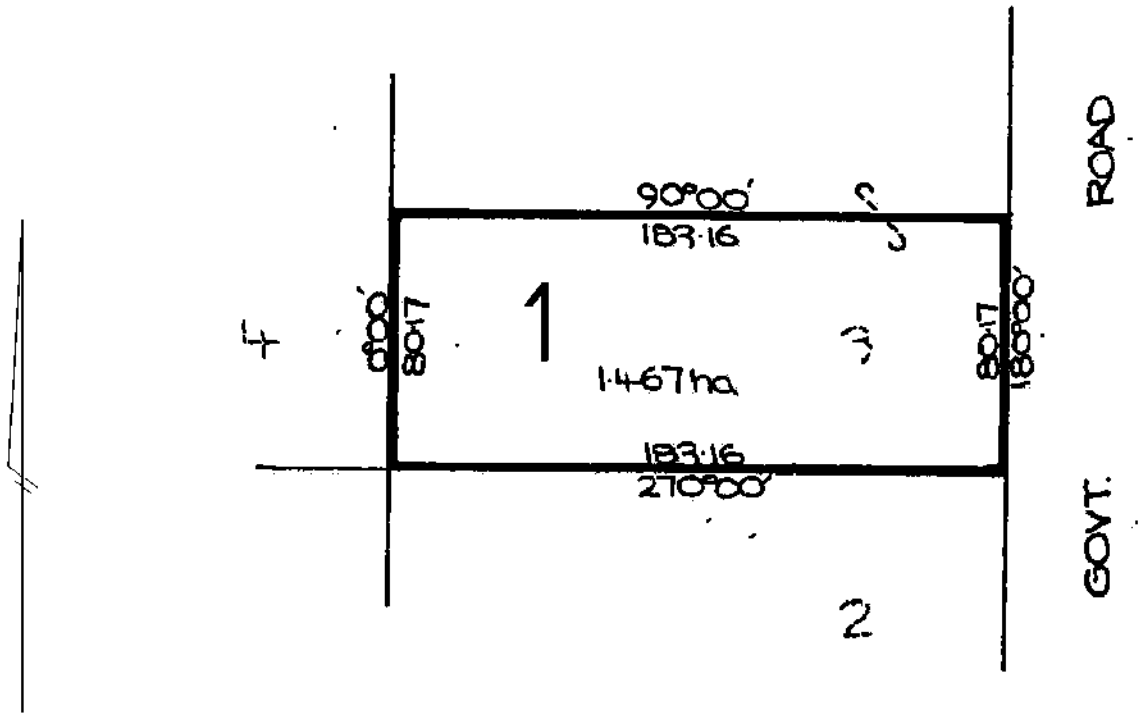

TABLE OF PARCEL IDENTIFIERS
WARNING: Where multiple parcels are referred to or shown on this Title Plan this does not imply separately disposable parcels under Section 8A of the Sale of Land Act 1962
PARCEL 1 = CA 3 (PT)

LENGTHS ARE IN METRES	Metres = 0.3048 x Feet Metres = 0.201168 x Links		Sheet 1 of 1 sheets

M.J. REDDIE SURVEYS Pty. Ltd.

ABN 49 005 965 257

LICENSED SURVEYOR

ENGINEERING SURVEYOR

Office: 1 Horner St. Beaconsfield, 3807
Branch Office: 19 Evergreen Ave Inverloch, 3996
Email: luke@reddiesurveys.com.au

POSTAL ADDRESS:
P.O. BOX 268
BERWICK 3806
PHONE: 9707 4117
FAX: 9707 4428

17/07/2025

Address: **16-18 Henry Road, Bunyip VIC 3815**
Proposal: **Subdivision of the land into 2 lots**

To whom it may concern,

We refer to your letter requesting further information under section 54 of the *Planning and Environment Act,* 1987.

We will respond to each item in your letter below.

1. An amended Arboricultural Impact Assessment
    a. See attached amended Arboricultural Impact Assessment attached below
2. A tree removal and retention plan
    a. See attached Tree Removal and Retention Plan attached below
3. Assessment against Clause 43.02-2 (Design and Development Overlay)
    a. See below discussion / assessment of Clause 43.02-02 against the proposed plan of subdivision at 16-18 Henry Road, Bunyip VIC 3815

I trust that the information and documents provided satisfy Council's request for further information. Notwithstanding, should the above or enclosed be insufficient for Council to proceed to permit issuance, we respectfully request an extension of time to provide a response, in addition to written details regarding any additional information or further alterations required.

We look forward to your favourable consideration of this matter.

Please do not hesitate to contact our office should you have any questions regarding this matter.

Kind Regards

[redacted]
Licensed Surveyor

M.J. Reddie Surveys P/L
Email: luke@reddiesurveys.com.au
Website: www.reddiesurveys.com.au
Mobile: 0438 538 870
Office: 97074117

M.J. REDDIE SURVEYS Pty. Ltd.

ABN 49 005 965 257

LICENSED SURVEYOR

ENGINEERING SURVEYOR

Office: 1 Horner St. Beaconsfield, 3807
Branch Office: 19 Evergreen Ave Inverloch, 3996
Email: luke@reddiesurveys.com.au

POSTAL ADDRESS:
P.O. BOX 268
BERWICK 3806
PHONE: 9707 4117
FAX: 9707 4428

17/04/2025

Address: **16-18 Henry Road, Bunyip VIC 3815**
Proposal: **Subdivision of the land into 2 lots**

To whom it may concern,

We refer to your letter requesting further information under section 54 of the *Planning and Environment Act*, 1987.

We will respond to each item in your letter below.

1. Amendments to the town planning report to include the following:
    a. Please see responses to the decision guidelines of Clause 32.03, 43.02,42.02 and 52.17
    b. Please see attached PS Version 3, location of driveway for lot 2 relating to the location of existing power pole.
2. A site analysis with supporting documentation
    a. See attached Site Analysis Version 3
    b. See attached Land Capability Assessment from Beata Lorincz
3. A Land Capability Assessment
    a. See attached Land capability Assessment from Beata Lorincz
4. An Arboricultural Impact Assessment Report
    a. See attached Arboricultural Impact Assessment Report from Arbkey
5. A Native Vegetation Regulation (NVR) assessment
    a. See attached Native Vegetation Regulation (NVR) assessment from Arbkey
6. Plans drawn to a stated scale, clearly showing the following:
    a. A building envelope and driveway
        i. See PS Version 3 & Site Analysis Version 3
    b. A wastewater (effluent) envelope
        i. See attached LCA for details

I trust that the information and documents provided satisfy the Council's request for further information. Notwithstanding, should the above or enclosed be insufficient for Council to proceed to permit issuance, we respectfully request an extension of time to provide a response, in addition to written details regarding any additional information or further alterations required.

We look forward to your favorable consideration of this matter.
Please do not hesitate to contact our office should you have any questions regarding

this matter.

Kind Regards

[redacted]
Licensed Surveyor

M.J. Reddie Surveys P/L
Email: luke@reddiesurveys.com.au
Website: www.reddiesurveys.com.au
Mobile: 0438 538 870
Office: 97074117

Planning Assessment – Subdivision of Land in the Cardinia Shire Council

Proposal:

Subdivision of land into two lots measuring 7,164 m² and 7,520 m² within the Cardinia Shire Council.

Clause 32.03 – Low Density Residential Zone (LDRZ)

Decision Guidelines Assessment:

Minimum lot size:

The proposal complies with the minimum subdivision requirements of the LDRZ. Each proposed lot exceeds 0.4 hectares (4,000 m²), which satisfies the default minimum lot size unless a different schedule applies. The lot sizes of 7,164 m² and 7,520 m² are appropriate for low density residential development.

Character of the area:

The proposed subdivision respects the existing semi-rural character of the surrounding area. The lots are large enough to retain significant vegetation and provide for generous setbacks, consistent with the preferred character of low-density residential areas in the municipality.

Effluent disposal:

Each lot is of sufficient size to accommodate on-site wastewater treatment in accordance with the relevant EPA Code of Practice, ensuring protection of public health and the environment. See attached LCA for further information.

Infrastructure services:

The subdivision can be serviced by existing infrastructure, with adequate access and connectivity to existing roads. Where reticulated services are not available, alternative systems can be employed in line with Council and environmental standards.

Clause 43.02 – Design and Development Overlay – Schedule 1 (DDO1)

Design and Siting Considerations:

Subdivision pattern:

The layout is respectful of the prevailing subdivision pattern and avoids fragmentation of land that would be inconsistent with the area's established development. The regular shape and generous lot sizes allow for future development that maintains a sense of openness.

Environmental and visual impact:

The subdivision maintains low site coverage and allows for retention of vegetation, reducing potential visual impacts. Any built form on the lots can be sited to minimize the impact on ridgelines, waterways, or visually sensitive areas, consistent with the objectives of DDO1.

Bushfire and environmental risks:

The proposed lot layout allows for adequate defendable space if required and can be developed in accordance with bushfire protection standards. The subdivision does not result in inappropriate development in environmentally sensitive locations.

Clause 42.02 – Vegetation Protection Overlay (VPO)
(If vegetation removal is required)

Environmental Protection and Vegetation Management:

Vegetation significance:

Should native vegetation removal be required to facilitate access or building envelopes, a detailed arboricultural or ecological assessment will be undertaken to ensure significant or high-value vegetation is retained wherever possible.

Justification for removal:

Any proposed removal will be clearly justified and limited to what is necessary to enable the subdivision and associated work, such as access or utility connection.

Offset requirements:

Where vegetation removal is unavoidable, appropriate offsets will be provided in accordance with the State Government's offset guidelines to ensure no net loss in biodiversity.

Clause 52.17 – Native Vegetation
Protection of Biodiversity:

Assessment pathway:

The subdivision may trigger the need for a Basic or Intermediate Assessment Pathway depending on the extent and type of vegetation proposed to be removed. A Native Vegetation Removal Report will be provided, if required.

Avoid and minimize principles:

The design of the subdivision seeks to avoid the removal of native vegetation as a first principle. Where removal is necessary, the extent will be minimized through careful sitting of any future development and access routes.

Offset strategy:

If native vegetation is impacted, a compliant offset will be secured via a third-party offset provider or on-site improvement in accordance with Clause 52.17 requirements.

Conclusion:

The proposed subdivision complies with the relevant planning controls under the Cardinia Planning Scheme, including the Low-Density Residential Zone and relevant overlays. The subdivision respects the area’s rural character, supports sustainable land use, and incorporates best-practice environmental and vegetation management. Any

removal of vegetation will be justified, minimized, and offset in accordance with planning policy, ensuring that the biodiversity and landscape values of the site and surrounding area are maintained.

M.J. REDDIE SURVEYS PTY LTD
• Licensed Surveyors • Engineering Surveyors • Town Planners
Call 03 9707 4117
1 Horner Street, Beaconsfield 3807

CLAUSE 56 –SUBDIVISION ASSESSMENT

M.J Reddie Surveys

16-18 HENRY ROAD BUNYIP 3815

16-18 HENRY ROAD BUNYIP 3815

2 Lot Subdivision

1.0 Introduction

This submission has been prepared in support of an application to subdivide the land know as 16-18 Henry Road into 2 (two) lots.

In the course of preparing this report the proposal has been assessed against the relevant town planning controls and policies contained within the Cardinia Planning Scheme.

Parcel Details	Lot 1 on TP103786V		
Planning Controls	ZONE: OVERLAYS:	Low Density Residential Zone – Schedule 2 Design and Development Overlay – Schedule 1 Vegetation Protection Overlay – Schedule 1	
Development Proposal	TOTAL SITE AREA:	Approx. 14684 sq meters	
	SUBDIVISION AREA:	Proposed Lot 1	7164 sqm
		Proposed Lot 2	7520 sqm
Planning Permit Trigger	Subdivide Land - Clause 32.03-3		

2.0 SITE AND CONTEXT DESCRIPTION

Site Conditions

The site is located along Henry Road. Currently there is an existing single storey dwelling on proposed lot 1, there is an existing gravel crossover on Henry Road accessing proposed lot 1 which will remain for access.

Proposed lot 2 currently is mainly grass land and some vegetation. A new crossover will need to be designed along the 10m wide frontage to Henry Road. Some vegetation will need to be removed for the driveway to be constructed. See below aerial of the property.

Surrounding Area

The surrounding area can be characterised as low density residential in all directions occupied by a mixture of single dwellings and associated outbuildings. Smaller lots then what is proposed already exists in the immediate area, including directly to the south. The 2 lot subdivision will suit the neighbourhood character well with multiple neighbouring properties completing the same subdivision.

3.0 PROPOSAL

The proposal seeks to subdivide the site into 2 lots, proposed lot 1 has an existing house on it while lot 2 is vacant land. See Plan of Subdivision PS928346N prepared by M.J.Reddie Surveys Pty Ltd.

- Lot 1 (existing dwelling) would have a frontage to Henry Road with an area of 7164 square meters
- Lot 2 is a would have a battle axe driveway of 10m fronting Henry Road with a total area of 7520sqm.

A full set of plans showing the proposed Plan of Subdivision and Design Response is provided

4.0 PLANNING CONTROLS

The subject site is included in the Low Density Residential Zone and is affected by the Vegetation Protection Overlay and the Design and Development Overlay.

Low Density Residential Zone

The "purposes" of the Low Density Residential Zone are:

- *To implement the State Planning Policy Framework and the Local 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*

Pursuant to Clause 32.03 of the Cardinia Planning Scheme, a permit is required to subdivide land. The schedule to the zone specifies a minimum lot size of 4000sqm and must meet the requirements of Clause 56 and;

- Must meet all of the objectives included in the clauses specified below.
- Should meet all of the standards included in Clause 56 except for Clauses 56.02-1, 56.03-1 to 56.03-4, 56.05- 2, 56.06-1, 56.06-3 and 56.06-6.

The Decision Guidelines of the Low Density Residential Zone applicable to this proposal are:

<u>General</u>

- *The Municipal Planning Strategy and the Planning Policy*

<u>Subdivision</u>

- *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 availability and provision of utility services, including sewerage, water, drainage, electricity, gas and telecommunications.*
- *In the absence of reticulated sewerage:*
    - *The capability of the lot to treat and retain all wastewater in accordance with the State Environment Protection Policy (Waters of Victoria) under the Environment Protection Act 1970.*
    - *The benefits of restricting the size of lots to the minimum required to treat and retain all wastewater in accordance with the State Environment Protection Policy (Waters of Victoria).*
    - *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*

The proposed subdivision will result in additional infill housing supply in Bunyip, whilst making use of existing infrastructure. The subdivision will implement a workable drainage scheme, provide access to existing walking/cycling paths for future occupants and will have convenient access to all necessary amenities and services currently available. The site proposed site areas are larger then that required under the LDRZ2, with the requirement being 4000sqm and the lots proposed both being over 7000sqm. This will allow for more garden area and ample room for deep soil planting.

Design and Development Overlay

The "purposes" of the Design and Development Overlay are:

- *To implement the Municipal Planning Strategy and the Planning Policy Framework.*
- *To identify areas which are affected by specific requirements relating to the design and built form of new development.*

The "Building and Works" objective under the Schedule to the Overlay are:

- *Any building must be located within the building envelope if one is registered on the plan of subdivision.*
- *Any building must be set back at least 30 metres from a Road Zone Category 1, 20 metres from a Road Zone Category 2, 10 metres from any other road, and 5 metres from any other boundary unless the location of the building is within an approved building envelope.*
- *Any building or works must be set back at least 60 metres from a waterway.*
- *If the building is an extension to an existing dwelling. If the building is an outbuilding ancillary to a dwelling, the gross floor area of all outbuildings on the land must not exceed 120 square metres.*
- *Building materials must be non-reflective or subdued colours which complement the environment.*
- *The height of any building must not exceed 7 metres above natural ground level.*
- *The works must not involve the excavation of land exceeding 1 metre or filling of land exceeding 1 metre and any disturbed area must be stabilised by engineering works or revegetation to prevent erosion.*
- *The slope of the land on which the buildings and works are undertaken must not exceed 20%.*
- *The buildings and works must not result in the removal or destruction of native vegetation (including trees, shrubs, herbs, sedges and grasses) within an area of botanical or zoological significance as shown on the mapped information provided by the Department of Natural Resources and Environment, with the exception of Sweet Pittosporum (Pittosporum undulatum).*

These requirements can be met by a restriction on the plan of subdivision if required. Building envelopes have not been required due to the large size of the lots.

Vegetation Protection Overlay

Purpose

- *To implement the Municipal Planning Strategy and the Planning Policy Framework.*
- *To protect areas of significant vegetation. To ensure that development minimises loss of vegetation.*
- *To preserve existing trees and other vegetation.*
- *To recognise vegetation protection areas as locations of special significance, natural beauty, interest and importance.*
- *To maintain and enhance habitat and habitat corridors for indigenous fauna.*
- *To encourage the regeneration of native vegetation.*

Vegetation Protection Objective to be Achieved

- *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*

Every effort will be maintained to protect the existing vegetation on the land where possible. If required by council, an arborist report displaying tree protection zones can be supplied. Permeable materials can be used to further enhance the protection of vegetation.

5.0 PLANNING POLICY FRAMEWORK

Planning Policy Framework (PPF)

The locational attributes for an increase in density accords with the general thrust of the Planning Scheme's policies as set out in Clauses 11, 15 and 16 of the PPF. These policies encourage urban consolidation to accommodate for a variety of living arrangements and to respond to market demand for housing. The issue surrounding urban consolidation is the balancing of the 'status quo' against the various government policies, which clearly contemplate change in order to achieve broader urban consolidation benefits on a subject land such as this. The attributes of the site lend the property to a marginal increase in density and, ultimately, a change in built form to that currently found on the subject site. The proposal provides a residential subdivision which will result in appropriate family sized housing in an area where a level of change is clearly

contemplated, within close proximity of a number of key facilities including shops, schools, major transport corridors and public open space.

It is clear that the subject site is in an area that can accommodate a modest level of change and increase in dwelling density as sought by urban consolidation principles whilst balancing the planning matters of neighbourhood character, built form outcomes and external amenity. It is submitted that the proposal achieves this balance within the existing residential area of Pakenham, incorporating an appropriate subdivision design that can reflect built form within the area, whilst increasing dwelling density and diversity and also ensuring amenity is maintained to adjoining and surrounding properties.

The proposed residential subdivision is an appropriate use of the site that is underdeveloped when compared to surrounding residential lots. The subdivision will create additional residential development within a well serviced area with existing community facilities including road networks, public transport connectivity and open space.

Furthermore, the following is highlighted:

- As encouraged by the PPF the subject land is located in a residential area that is well serviced by various forms of social and physical infrastructure including public transport, commercial areas, parkland, schools and public transport. The proposed subdivision makes greater use of the land that is available on the subject land and concentrates development in an established residential area without adversely affecting surrounding properties or services.
- The proposal provides for a modest increase in the diversity of housing in this area.
- The proposal is generally consistent with the PPF as it:
    - Is generally well-designed in compliance with Clause 56 - ResCode.
    - Respects the neighbourhood character given the modest range of lot sizes
    - Improves housing choice and diversity in the area.
    - Makes more efficient use of existing infrastructure and services.

It is submitted that the proposal is an example of development encouraged by Planning Policy Framework within the established urban area to reduce the pressure for fringe development.

The Planning Policy Framework for the Cardinia Planning Scheme outlines the key issues that are facing the municipality. The following key policies are relevant to the assessment of this application:

- Cardinia Key Issues and Strategic Vision

Cardinia Key Issues and Strategic Vision

Key Influences

- *Urban growth including urban pressures on the rural hinterland and management of green wedge areas.*

- *The quality and character of existing rural townships.*
- *Infrastructure to meet the needs of the existing and future community.*
- *Environmentally significant areas.*
- *Areas of significant landscape value.*
- *The protection and sustainable use of agricultural land. The local economy including employment opportunities.*

The key issues raised are of urban growth and the pressure on green wedge areas. The subdivision promotes consolidation with large lot areas, much larger then that required of the low density residential zone. This provides for multiple areas for deep soil planting to enhance the landscape and increase vegetation.

The proposed subdivision responds to the objectives of the MSS by managing the consolidation of urban growth within a residential setting which complements the existing residential character of the area and by conserving and enhancing a highly valued landscape within the municipality.

The proposal is submitted to have due regard to relevant planning issues affecting the Cardinia Strategic Vision. As is evident in the submission, the proposal has sought to protect existing trees on neighbouring properties, whilst contributing to the diversity of housing choice for Cardinia residents and providing for an intensification of development which meets the increased demand for housing.

6.0 GENERAL AND PARTICULAR PROVISIONS

Clause 52.01 — Public Open Space Contribution and Subdivision

This policy states that if a person wishes to subdivide land a contribution to the council for public open space in an amount specified schedule to this clause must be made. Clause 52.01 states that a public open space contribution may be made only once for any of the land to be subdivided.

It is acknowledged that a public open space contribution has not been made on the land previously and would not need to be made (in accordance with Clause 52.01) should a permit issue for the subdivision.

Clause 56 – Residential Subdivision

See **Appendix A** of this report for a full assessment against the relevant standards of Clause 56 (Residential Subdivision):

Clause 65.02 - Decision Guidelines

With regard to this clause, the following comments are made:

Approval of an application or plan, states that before deciding on an application to subdivide land, the responsible authority must also consider, as appropriate:

- *The suitability of the land for subdivision.*
- *The existing use and possible future development of the land and nearby land.*
- *The availability of subdivided land in the locality, and the need for the creation of further lots.*
- *The effect of development on the use or development of other land which has a common means of drainage.*
- *The subdivision pattern having regard to the physical characteristics of the land including existing vegetation.*
- *The density of the proposed development.*
- *The area and dimensions of each lot in the subdivision.*
- *The layout of roads having regard to their function and relationship to existing roads.*
- *The movement of pedestrians and vehicles throughout the subdivision and the ease of access to all lots.*
- *The provision and location of reserves for public open space and other community facilities.*
- *The staging of the subdivision.*
- *The design and siting of buildings having regard to safety and the risk of spread of fire.*
- *The provision of off-street parking.*
- *The provision and location of common property.*
- *The functions of any body corporate.*
- *The availability and provision of utility services, including water, sewerage, drainage, electricity and gas.*
- *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.*
- *Whether, in relation to subdivision plans, native vegetation can be protected through subdivision and siting of open space areas.*

Assessment Summary

Clause 65 does not introduce any additional decision making criteria that has not been considered as part of the applicable planning controls. The proposed subdivision is in accordance with all relevant decision guidelines of Clause 65 of the Cardinia Planning Scheme. With regard to this clause, the following comments are made:

- The land is suitable for subdivision.
- The proposed development and future use of the land is entirely consistent with the existing and proposed development of the land and nearby land.

- It is considered that the proposed subdivision design is responsive to the shape of the land and the natural constraints of the land including the retention of all significant vegetation on site.

Clause 66.01 – Referrals and Notice Provisions

The provisions of Clause 66.01 set out the types of applications which must be referred under Section 55 of the Act or for which notice must be given under Section 52(1) (c) of the Act.

Specifically, an application for a two-lot subdivision must include mandatory conditions as set out in Clause 66.01.

7.0 CONCLUSION

The applicable planning scheme provisions outlined above are supportive of the proposed residential subdivision. The subdivision has been designed in accordance with the Planning Policy Framework and in accordance with the requirements of the zoning and overlay controls which have been set out above. The proposed development will provide for additional allotments for the establishment of future housing within the municipality. The increase in the total number of allotments will assist in catering for those seeking to reside in the municipality, while providing for diversity to accommodate the varying housing needs. The proposed subdivision will ensure that the values of the area will not be compromised. The size of the allotments will not only provide for the establishment of residential dwellings but will also provide ample opportunities for the establishment of landscaping and revegetation which will complement the area.

For the reasons discussed above, we respectfully submit that the proposal should be supported and that a Planning Permit for this proposal be issued

Clause 56 Assessment

Clause 56.03 - Liveable and Sustainable Communities		
Clause 56.03-5 **Neighbourhood character objective** • To design subdivisions that respond to neighbourhood character.	**Standard C6** Subdivision should: • Respect the existing neighbourhood character or achieve a preferred neighbourhood character consistent with any relevant neighbourhood character objective, policy or statement set out in this scheme. • Respond to and integrate with the surrounding urban environment. • Protect significant vegetation and site features.	**Complies** A subdivision site and context description and design response plan have been provided as part of this application, as well as a detailed written description within the accompanying town planning submission, outlining the existing conditions of the subject site as well as its surrounding environs.
Clause 56.04-2 **Lot area and building envelopes objective** • To provide lots with areas and dimensions that enable the appropriate siting and construction of a dwelling, solar access, private open space, vehicle access and parking, water management, easements	**Standard C8** Lots of between 300 square metres and 500 square metres should: • Contain a building envelope that is consistent with a development of the lot approved under this scheme, or • If no development of the lot has been approved under this scheme, contain a building envelope and be able to contain a rectangle measuring 10 metres	**Complies** Giving the lot sizes, building envelopes have not been provided.

and the retention of significant vegetation and site features.	by 15 metres, or 9 metres by 15 metres if a boundary wall is nominated as part of the building envelope. If lots of between 300 square metres and 500 square metres are proposed to contain dwellings that are built to the boundary, the long axis of the lots should be within 30 degrees east and 20 degrees west of north unless there are significant physical constraints that make this difficult to achieve.	
Clause 56.04-3 **Solar orientation of lots objective** • To provide good solar orientation of lots and solar access for future dwellings.	**Standard C9** Unless the site is constrained by topography or other site conditions, at least 70 percent of lots should have appropriate solar orientation. Lots have appropriate solar orientation when: • The long axis of lots are within the range north 20 degrees west to north 30 degrees east, or east 20 degrees north to east 30 degrees south. • Lots between 300 square metres and 500 square metres are proposed to contain dwellings that are built to the boundary, the long axis of the lots should be within 30 degrees east and 20 degrees west of north. • Dimensions of lots are adequate to protect solar access to the lot, taking into account likely dwelling size and the relationship of each lot to the street.	**Complies** Given the lot size, the site is considered to have appropriate solar orientation for the existing dwellings.

Clause 56.04-5 **Common area objectives** • To identify common areas and the purpose for which the area is commonly held. • To ensure the provision of common area is appropriate and that necessary management arrangements are in place. • To maintain direct public access throughout the neighbourhood street network. •	**Standard C11** An application to subdivide land that creates common land must be accompanied by a plan and a report identifying: • The common area to be owned by the body corporate, including any streets and open space. • The reasons why the area should be commonly held. • Lots participating in the body corporate. • The proposed management arrangements including maintenance standards for streets and open spaces to be commonly held.	**Complies** No common property is proposed for the subdivision.
Clause 56.06-8 **Lot access objective** • To provide for safe vehicle access between roads and lots.	**Standard C21** Vehicle access to lots abutting arterial roads should be provided from service roads, side or rear access lanes, access places or access streets where appropriate and in accordance with the access management requirements of the relevant roads authority. Vehicle access to lots of 300 square metres or less in area and lots with a frontage of 7.5 metres or less should be provided via rear or side access lanes, places or streets. The design and construction of a crossover	**Complies** Access to lot 2 will need to be constructed to the satisfaction of the responsible authority. Lot 1 will utilize the existing crossover.

	should meet the requirements of the relevant road authority.	
Clause 56.07 - Integrated Water Management		
Clause 56.07-1 Drinking water supply objectives • To reduce the use of drinking water. • To provide an adequate, cost-effective supply of drinking water.	**Standard C22** The supply of drinking water must be: Designed and constructed in accordance with the requirements and to the satisfaction of the relevant water authority. Provided to the boundary of all lots in the subdivision to the satisfaction of the relevant water authority.	**Complies** The existing building does not have water and will remain on the existing tank water. The owner will enter into an agreement with South East Water for the provision of water supply to lot 2.
Clause 56.07-2 **Reused and recycled water objective** • To provide for the substitution of drinking water for non-drinking purposes with reused and recycled water.	**Standard C23** Reused and recycled water supply systems must be: • Designed, constructed and managed in accordance with the requirements and to the satisfaction of the relevant water authority, Environment Protection Authority and Department of Human Services. • Provided to the boundary of all lots in the subdivision where required by the relevant water authority.	**Complies** The size of the subdivision and the number of lots involved is too small to implement any recycled water supply. The use of water tanks and other water saving measures can be implemented into any future development.

Clause 56.07-3 **Waste water management objective** • To provide a waste water system that is adequate for the maintenance of public health and the management of effluent in an environmentally friendly manner.	**Standard C24** Waste water systems must be: • Designed, constructed and managed in accordance with the requirements and to the satisfaction of the relevant water authority and the Environment Protection Authority. • Consistent with any relevant approved domestic waste water management plan. Reticulated waste water systems must be provided to the boundary of all lots in the subdivision where required by the relevant sewerage authority.	**Complies** Reticulated waste water (sewer) is currently unavailable to the site. Septic tanks will be used to manage the waste water.
Clause 56.07-4 **Urban run-off management objectives** • To minimise damage to properties and inconvenience to residents from urban run-off. • To ensure that the street operates adequately during major storm events and provides for public safety. • To minimise increases in	**Standard C25** The urban stormwater management system must be: • Designed and managed in accordance with the requirements and to the satisfaction of the relevant drainage authority. • Designed and managed in accordance with the requirements and to the satisfaction of the water authority where reuse of urban run-off is proposed. • Designed to meet the current best practice performance objectives for stormwater	**Complies** Stormwater management and outfall will be to the satisfaction of the Council as required via any permit conditions the Council implements. The storm water discharged from hard standing or impervious surfaces is minimal compared to the size of the property.

stormwater runoff and protect the environmental values and physical characteristics of receiving waters from degradation by urban runoff.	quality as contained in the Urban Stormwater – Best Practice Environmental Management Guidelines (Victorian Stormwater Committee 1999) as amended. • Designed to ensure that flows downstream of the subdivision site are restricted to predevelopment levels unless increased flows are approved by the relevant drainage authority and there are no detrimental downstream impacts. The stormwater management system should be integrated with the overall development plan including the street and public open space networks and landscape design. For all storm events up to and including the 20% Average Exceedence Probability (AEP) standard: • Stormwater flows should be contained within the drainage system to the requirements of the relevant authority. • Ponding on roads should not occur for longer than 1 hour after the cessation of rainfall. For storm events greater than 20% AEP and up to and including 1% AEP standard: • Provision must be made for the safe and effective passage of stormwater flows. • All new lots should be free from inundation or to a lesser standard of flood protection where agreed by the relevant floodplain management authority. • Ensure that streets, footpaths and cycle paths that are subject	

	to flooding meet the safety criteria da Vave < 0.35 m2/s (where, da = average depth in metres and Vave = average velocity in metres per second). The design of the local drainage network should: • Ensure run-off is retarded to a standard required by the responsible drainage authority. • Ensure every lot is provided with drainage to a standard acceptable to the relevant drainage authority. Wherever possible, run-off should be directed to the front of the lot and discharged into the street drainage system or legal point of discharge. • Ensure that inlet and outlet structures take into account the effects of obstructions and debris build up. Any surcharge drainage pit should discharge into an overland flow in a safe and predetermined manner. • Include water sensitive urban design features to manage runoff in streets and public open space. Where such features are provided, an application must describe maintenance responsibilities, requirements and costs. Any flood mitigation works must be designed and constructed in accordance with the requirements of the relevant floodplain management authority.	
Clause 56.08 - Site Management		

Clause 56.08-1 **Site management objectives** • To protect drainage infrastructure and receiving waters from sedimentation and contamination. • To protect the site and surrounding area from environmental degradation or nuisance prior to and during construction of subdivision works. • To encourage the re-use of materials from the site and recycled materials in the construction of subdivisions where practicable.	**Standard C26** A subdivision application must describe how the site will be managed prior to and during the construction period and may set out requirements for managing: • Erosion and sediment. • Dust. • Run-off. • Litter, concrete and other construction wastes. • Chemical contamination. • Vegetation and natural features planned for retention. Recycled material should be used for the construction of streets, shared paths and other infrastructure where practicable.	**Complies** The level of construction on site is considered minimal for the 2 lot subdivision other than the relocation of services that may be required. It is considered that the standard can be satisfied via a condition on permit requiring the submission of an Environmental Management Plan.
Clause 56.09 - Utilities		
Clause 56.09-1 **Shared Trenching Objective** • To maximise the opportunities for shared trenching. • To minimise constraints on	**Standard C27** Reticulated services for water, gas, electricity and telecommunications should be provided in shared trenching to minimise construction costs and land allocation for underground services.	**Complies** Most of the infrastructure is existing, however, where possible shared trenching on the site will be conducted. Detailed design plans will be prepared prior to works commencing.

landscaping within street reserves.		
Clause 56.09--2 **Electricity, telecommunications and Gas Objective** • To provide public utilities to each lot in a timely, efficient and cost effective manner. • To reduce greenhouse gas emissions by supporting generation and use of electricity from renewable sources.	**Standard C28** The electricity supply system must be designed in accordance with the requirements of the relevant electricity supply agency and be provided to the boundary of all lots in the subdivision to the satisfaction of the relevant electricity authority. Arrangements that support the generation or use of renewable energy at a lot or neighbourhood level are encouraged. The telecommunication system must be designed in accordance with the requirements of the relevant telecommunications servicing agency and should be consistent with any approved strategy, policy or plan for the provision of advanced telecommunications infrastructure, including fibre optic technology. The telecommunications system must be provided to the boundary of all lots in the subdivision to the satisfaction of the relevant telecommunications servicing authority. Where available, the reticulated gas supply system must be designed in accordance with the requirements of the relevant gas supply agency and be provided to the boundary of all lots in the subdivision to the satisfaction of the relevant gas supply agency.	**Complies** The proposed subdivision will have access to all services presently enjoyed by other properties in this area. The owner will be required to enter into an agreement with the relevant service providers for the provision of such services.

Response to Clause 43.02 and Schedule 1 – Design and Development Overlay (DDO1)

Cardinia Planning Scheme

This response addresses the relevant decision guidelines of Clause 43.02 and Schedule 1 (DDO1), demonstrating that the proposed subdivision and development are consistent with the objectives of the overlay and preserve the prevailing character of the area.

Large Setbacks and Building Placement

The proposed building envelopes for both lots incorporate substantial setbacks from all boundaries. This includes deep front setbacks that maintain visual openness to the street, generous side setbacks to reduce any bulk impacts on neighbouring properties, and adequate rear setbacks to maintain privacy and vegetation. The siting of the proposed dwelling towards the rear of the lot further reduces any potential visual dominance and ensures that the established streetscape character is preserved. These setbacks are consistent with the low-density, semi-rural expectations set out in DDO1.

Creation of Large Garden Areas

Both proposed lots are designed with significant garden areas, well exceeding the minimum expectations. These garden spaces support the continued presence of canopy trees, low-scale landscaping, and future planting opportunities—ensuring that the semi-rural, green landscape character promoted by DDO1 is maintained. This approach facilitates biodiversity, reduces stormwater runoff, and visually reinforces the area's landscape-dominant character. It also ensures flexibility for future use of land in a manner consistent with the surrounding development pattern.

Low-Density Residential Character

The subdivision clearly maintains a low-density character through the provision of large lot sizes, significant setbacks, and substantial unbuilt open space. This outcome aligns directly with the intent of DDO1, which seeks to protect and enhance areas with spacious, landscape-focused development. The proposal avoids urban consolidation or overdevelopment, instead enhancing the existing character with thoughtfully spaced dwellings and garden areas that contribute to a peaceful and attractive residential setting.

Minimal Visual Impact to Streetscape

The dwelling envelope on the primary lot is positioned to the rear, ensuring that the built form does not dominate the public realm. The visual presence of the dwelling is significantly softened by the setback and potential landscaping. This design approach protects the scenic qualities of the street and avoids a sense of overcrowding or enclosure, both of which are critical considerations under DDO1. It also allows for continuity of the existing rhythm of development seen along the street frontage, with open lawns and gardens fronting the road.

Consistency with Nearby Development Patterns

There is a growing precedent of similar subdivisions in the immediate and broader local area that follow this same structure, including 1 Jolley Road, Bunyip. These developments adopt the same low-density subdivision logic: large blocks with substantial setbacks, rear-sited dwellings, and generous landscaping capacity. The current proposal is entirely in keeping with this emerging character and represents a

natural and appropriate evolution of the neighbourhood, consistent with planning outcomes supported by Council in similar contexts.

Building and Works - Accessway and Crossover (Lot 2)

Crossover Location & Design:

- Access to Lot 2 is proposed via a new crossover to Henry Road.
- The crossover will be positioned to ensure safe sight lines for ingress and egress in accordance with the relevant road authority requirements and AS2890 standards.

Accessway Construction:

- A driveway will be constructed from the new crossover to provide vehicular access to the future building envelope on Lot 2.
- Works will involve:
  - Minor earthworks to achieve appropriate grades.
  - Construction of a sealed surface treatment (e.g., concrete or asphalt) to prevent erosion and manage stormwater.
  - Installation of any necessary drainage to manage runoff and comply with infrastructure design standards.

Response to Specific Decision Guidelines under Clause 43.02 & Schedule 1:

1. The design objectives of this schedule
   The proposal respects and enhances the semi-rural, low-density character. Setbacks, garden areas, and building placement all meet the objectives to avoid visual dominance and maintain spaciousness.
2. The impact of the development on the character of the area
   By preserving open space and providing rear-set dwellings, the character of the area is enhanced rather than diminished. There is no adverse visual impact to the street or neighbouring properties.
3. Whether the development provides adequate landscaping opportunities
   Ample landscaping opportunities are preserved, with large, unencumbered areas on both lots for planting. These areas will support long-term vegetation growth consistent with the desired semi-rural landscape.
4. Whether the development maintains an open, landscaped front garden area
   Front gardens will remain open, generously set back from the road, and free from visual obstructions. This maintains a clear visual and physical connection to the surrounding environment.
5. The height, bulk, and siting of buildings
   The proposed building envelopes are located and dimensioned to reduce bulk, maintain spacing between structures, and avoid visual intrusion. The height will be consistent with neighbouring buildings.
6. The impact on views and vistas
   The siting avoids obstruction of any key views or vistas and contributes positively to the open landscape views typical of the area.

Conclusion

The proposed subdivision and building envelopes clearly meet the intent and specific decision guidelines of Clause 43.02 and Schedule 1 (DDO1) of the Cardinia Planning Scheme. Through large setbacks, preservation of garden areas, and the rear location of the proposed dwelling, the development reinforces the low-density, landscape-

dominant character sought for this area. Similar subdivision patterns—such as at 1 Jolley Road, Bunyip—demonstrate that this form of development is both supported and consistent with the planning objectives of the region.

Accordingly, the proposal represents a responsible and context-sensitive form of development that warrants support.

SUBDIVISION (PROCEDURES) REGULATIONS 2011 - SCHEDULE 1

SCHEDULE 1

FORMS

Sch. 1

FORM 1

Regulation 6

Subdivision Act 1988

APPLICATION FOR CERTIFICATION OF PLAN

PART A. [*All Applicants complete this Section*]

Plan No.: PS 928346N

To: Cardinia Shire Council
Po Box 7 Pakenham VIC 3810

I: [redacted]

Of: PO BOX 268
Berwick, 3806

Telephone: 9707 4117

apply to have the attached:

*PLAN OF SUBDIVISION

*PLAN OF CONSOLIDATION

*PLAN OF CREATION/REMOVAL/VARIATION OF EASEMENT/RESTRICTION

certified under the **Subdivision Act 1988**

and to have advice of street numbers allocated

1. 16-18 Henry Rd Bunyip

2. **Name:**
Address: [redacted]

3. [redacted]

Does the attached plan do anything requiring the unanimous resolution of the members of the owners corporation under Division 3 of Part 5 of the **Subdivision Act 1988** or an order of the Victorian Civil and Administrative Tribunal under section 34D of the **Subdivision Act 1988** ?

*YES [*provide details*]/*NO

If 'YES', have the members of the affected owners corporation passed a unanimous resolution to proceed with the alterations shown on the attached plan?

*YES/*NO

If 'NO', has the Victorian Civil and Administrative Tribunal made an order under section 34D of the **Subdivision Act 1988** ?
Sch. 1

*YES/*NO

Signed:

[*Name and signature of Applicant*]

IF THE APPLICANT IS NOT THE OWNER, the owner must provide written consent under section 5(5) of the **Subdivision Act 1988** —

(a) if the application is made in paper form by signing the following—

I/We consent to the applicant submitting this plan to the Council for certification.

Signed

[redacted]

Arboriculture and Urban Forest Consultants
www.arbkey.com | info@arbkey.com | 0490 355 342

Arboricultural Impact Assessment

Location:

16-18 Henry Road, Bunyip

Report Commissioned by:

[redacted]

Author:

[redacted]

Grad. Cert. Arb.

Arbkey ref: 25-03-03HenryBunyipV3.docx

Date submitted: July 14, 2025

Table of Contents

1 Introduction

Arbkey has been engaged by [redacted] to provide an Arboricultural Impact Assessment for trees likely to be affected by a proposed development at 16-18 Henry Road, Bunyip. 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 approximately 15,000m2 residential property featuring a dwelling, sheds, northern dam and surrounding driveways, gardens and grassed areas (Figure 1). Canopy trees, often within defined screens, are a prominent feature of the site and surrounds.

Figure 1: Subject site frontage

2.1 Development Proposal

Subdivision of the property to two (2) lots and establishment of a driveway and building envelope to service the newly formed 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 (DEECA 2025). 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 exemptions applies
52.17 Native Vegetation	A permit is required to remove non-planted Victorian native vegetation. A list of exemptions applies

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 (DEECA 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 25 March 2025, 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, 16-18 Henry Road, Bunyip. 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
RFI MAP 2	PS 928346N	MJ Reddie Surveys	Plans	NA
J&J A'HERNE final	NA	MJ Reddie Surveys	Feature survey	1 and 9 October 2024
24-10-219(Tree Retention Plan)	NA	MJ Reddie Surveys	Tree removal/retention plan	NA

4 Observations

4.1 Tree Details

309 trees were assessed, 224 on the site itself and 85 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
Pittosporum undulatum	Sweet Pittosporum	Australian Native	102
xCuprocyparis leylandii	Leyland Cypress	Exotic	88
Eucalyptus globoidea	White Stringybark	Australian Native	20
Hakea salicifolia	Willow Hakea	Australian Native	15
Melaleuca ericifolia	Swamp Paperbark	Australian Native	12
Pyrus calleryana	Callery Pear	Exotic	11
Mixed Specis			61

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	18	13, 27, 32, 34, 35, 39, 43, 47, 60, 65, 104, 126, 132, 171, 204, 212, 229, 234
Medium	120	3, 4, 5, 6, 8, 10, 11, 14, 16, 17, 18, 19, 20, 21, 22, 25, 28, 30, 33, 38, 41, 42, 48, 49, 50, 52, 53, 54, 56, 58, 61, 62, 64, 68, 69, 70, 72, 73, 75, 77, 79, 82, 85, 85, 87, 88, 89, 90, 92, 93, 94, 95, 96, 97, 98, 100, 101, 103, 105, 108, 110, 112, 114, 116, 117, 118, 119, 120, 122, 124, 125, 127, 128, 129, 133, 134, 135, 136, 137, 139, 140, 141, 142, 143, 144, 146, 147, 148, 149, 150, 151, 152, 153, 154, 158, 164, 165, 167, 168, 169, 170, 176, 181, 182, 184, 187, 188, 189, 192, 194, 199, 200, 202, 203, 205, 206, 210, 224, 240, 255
Low	73	1, 2, 9, 12, 15, 44, 55, 59, 66, 67, 76, 78, 80, 81, 83, 84, 91, 102, 106, 107, 130, 159, 160, 161, 162, 163, 166, 172, 173, 175, 186, 190, 193, 195, 196, 207, 209, 211, 213, 214, 216, 217, 218, 220, 222, 223, 225, 226, 227, 228, 231, 232, 233, 235, 236, 237, 238, 239, 241, 242, 243, 244, 245, 246, 248, 250, 252, 254, 258, 262, 263, 266, 268
None	13	36, 46, 131, 138, 155, 174, 177, 178, 191, 197, 201, 219, 221
Third Party Ownership	85	7, 23, 24, 26, 29, 31, 37, 40, 45, 51, 57, 63, 71, 74, 99, 109, 111, 113, 115, 121, 123, 145, 156, 157, 179, 180, 183, 185, 198, 208, 215, 230, 247, 249, 251, 253, 256, 257, 259, 260, 261, 264, 265, 267, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309

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. NRZ and SRZ details for all trees has been supplied in Appendix 3: NRZ and SRZ Details. Further information on NRZs and SRZs has provided in Appendix 7: Structural Root Zone and Notional Root Zone Overview.

5.3 Arboricultural Impact, NRZ Encroachment and Viability

5.3.1 Tree removal

38 trees are proposed for removal under the current development plans (Table 5).

- 31 of these trees, Trees 64, 70, 72, 75, 77, 79, 82, 85, 87, 88, 90, 93, 96, 98, 101, 103, 104, 108, 112, 116, 117, 118, 122, 128, 160, 164, 197, 201, 206, 220, and 290, would require a permit to remove under the VPO1 that is applied to the site.
- Three (3), Trees 164, 197 and 206, would require a permit to remove under section 52.17 of the planning scheme at the site.
- Four (4) of these trees, Trees 256, 265, 270 and 290, are semi-mature, self-set environmental weeds located within council managed road reserve. Permission from these tree's manager, Cardinia Shire Council, will be required prior to their 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)
64	*xCuprocyparis leylandii*	Leyland Cypress	Medium	6	26
70	*xCuprocyparis leylandii*	Leyland Cypress	Medium	6	26
72	*xCuprocyparis leylandii*	Leyland Cypress	Medium	6	26
75	*xCuprocyparis leylandii*	Leyland Cypress	Medium	6	26
77	*xCuprocyparis leylandii*	Leyland Cypress	Medium	6	26
79	*xCuprocyparis leylandii*	Leyland Cypress	Medium	6	26
82	*xCuprocyparis leylandii*	Leyland Cypress	Medium	6	26
85	*xCuprocyparis leylandii*	Leyland Cypress	Medium	6	26
87	*xCuprocyparis leylandii*	Leyland Cypress	Medium	6	26
88	*xCuprocyparis leylandii*	Leyland Cypress	Medium	6	26
90	*xCuprocyparis leylandii*	Leyland Cypress	Medium	6	26
93	*xCuprocyparis leylandii*	Leyland Cypress	Medium	6	26
96	*xCuprocyparis leylandii*	Leyland Cypress	Medium	6	26
98	*xCuprocyparis leylandii*	Leyland Cypress	Medium	6	26
101	*xCuprocyparis leylandii*	Leyland Cypress	Medium	6	26
103	*xCuprocyparis leylandii*	Leyland Cypress	Medium	6	26
104	*Eucalyptus globulus*	Blue Gum	High	18	61
107	*Pittosporum undulatum*	Sweet Pittosporum	Low	5	14
108	*xCuprocyparis leylandii*	Leyland Cypress	Medium	6	26
112	*xCuprocyparis leylandii*	Leyland Cypress	Medium	6	26
116	*xCuprocyparis leylandii*	Leyland Cypress	Medium	6	26
117	*Pyrus calleryana*	Callery Pear	Medium	6	41
118	*Pyrus calleryana*	Callery Pear	Medium	5	33
122	*xCuprocyparis leylandii*	Leyland Cypress	Medium	6	26
128	*Grevillea robusta*	Silky Oak	Medium	13	60
160	*Melaleuca ericifolia*	Swamp Paperbark	Low	5	13
164	*Eucalyptus fulgens*	Dandenong Scent-bark	Medium	6	30
166	*Pittosporum undulatum*	Sweet Pittosporum	Low	5	16.58
197	*Eucalyptus ovata*	Swamp Gum	None	23	116
201	*Pinus pinaster*	Maritime Pine	None	15	45
206	*Eucalyptus ovata*	Swamp Gum	Medium	13	33
207	*Pittosporum undulatum*	Sweet Pittosporum	Low	5	10
211	*Pittosporum undulatum*	Sweet Pittosporum	Low	5	10
220	*Pinus pinaster*	Maritime Pine	Low	14	41
256	*Pittosporum undulatum*	Sweet Pittosporum	Third Party Ownership	5	9
265	*Pittosporum undulatum*	Sweet Pittosporum	Third Party Ownership	4	13
270	*Pittosporum undulatum*	Sweet Pittosporum	Third Party Ownership	5	12.73
290	*Melaleuca ericifolia*	Swamp Paperbark	Third Party Ownership	3	7.81

5.3.2 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.

18 of the trees proposed for retention have NRZ encroached by the proposed development's footprint (Table 6).

Table 6: Trees with NRZ encroached by the design footprint.

Tree ID	Genus Species	NRZ Encroachment (%)	SRZ Encroachment?	Encroachment Classification
47	*Eucalyptus globoidea*	10.34	No	Moderate
53	*xCuprocyparis leylandii*	10.85	No	Moderate
54	*xCuprocyparis leylandii*	6.15	No	Minor
60	*Eucalyptus globoidea*	15.38	No	Moderate
61	*xCuprocyparis leylandii*	8.92	No	Minor
65	*Eucalyptus globoidea*	15.24	No	Moderate
68	*Eucalyptus globoidea*	7.91	No	Minor
76	*Acer negundo*	0	No	Minor
92	*xCuprocyparis leylandii*	9.57	No	Minor
94	*xCuprocyparis leylandii*	9.42	No	Minor
97	*xCuprocyparis leylandii*	0.84	No	Minor
99	*Eucalyptus obliqua*	1.28	No	Minor
125	*xCuprocyparis leylandii*	3.59	No	Minor
126	*Eucalyptus botryoides*	1.52	No	Minor
175	*Melaleuca ericifolia*	0.67	No	Minor
178	*Melaleuca ericifolia*	0.87	No	Minor
185	*Eucalyptus obliqua*	3.41	No	Minor
247	*Pittosporum undulatum*	1.19	No	Minor

The remaining trees proposed for retention do not have NRZ encroached by the design footprint and would remain viable throughout the design's implementation.

5.3.3 NRZ, SRZ and Encroachment Map

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

5.3.4 Mitigation measures

5.3.4.1 Trees 47, 53, 60, 65

Trees 47, 53, 60 and 65 have NRZ moderately encroached by the proposed building envelope. While these trees would be expected to remain viable throughout the less than 20% encroachment of their NRZ, future detailed designs within the building envelope must implement tree sensitive construction methods when designing and installing features within their NRZ.

5.4 Planning Implications – Tree Removal and Consequential Losses

Cardinia Shire Council has requested clarification as to why three (3) trees proposed for removal, Trees 104, 128 and 160, are not considered subject to the permit requirements of section 52.17 of the planning scheme at the site.

- Trees 104 and 128 are not of species that are endemic or that have naturalised at the subject site (Costermans 2009). They are of planted origin and are not subject to the permit requirements of section 52.17 of the planning scheme.
- Tree 160 is small regrowth (<15cm DSH) that is likely to be less than 10 years old. As such, this tree forms an exemption to section 52.17.

Figure 2: Tree 160.

Cardinia Shire Council has requested information on trees that would become exempt from section 52.17 if the proposed boundaries were implemented and fenced. Trees within 1m of a boundary fence between properties in different ownership are considered exempt from section 52.17.

- One (1) tree, Tree 197, would become exempt from section 52.17 under this provision. This tree is already considered as removed under the assessment.
    - Cardinia Shire Council has requested clarification as to why Tree 132 would not be considered a consequential loss due to the new boundary's establishment. Tree 132, a Blue Gum (*Eucalyptus globulus*), is not of a species that is endemic or naturalised to the subject site (Costermans 2009). It is of planted origin and is not subject to section 52.17 of the planning scheme at the site.

6 Conclusions and Recommendations

Subdivision of the property to two (2) lots and establishment of a driveway and building envelope to service the newly formed lot is currently proposed at 16-18 Henry Road, Bunyip. Arbkey has been engaged to assess the impact of the development on the trees at or adjacent to the site. 309 trees were assessed, 224 on the site and 85 within adjacent property. 38 of these trees are proposed for removal under the development plans:

- 31 of these trees, Trees 64, 70, 72, 75, 77, 79, 82, 85, 87, 88, 90, 93, 96, 98, 101, 103, 104, 108, 112, 116, 117, 118, 122, 128, 160, 164, 197, 201, 206, 220, and 290, would require a permit to remove under the VPO1 that is applied to the site.
- Three (3), Trees 164, 197 and 206, would require a permit to remove under section 52.17 of the planning scheme at the site.
- Four (4) of these trees, Trees 256, 265, 270 and 290, are semi-mature, self-set environmental weeds located within council managed road reserve. Permission from these tree's manager, Cardinia Shire Council, will be required prior to their 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). 18 of the trees proposed for retention have NRZ encroached by the proposed design footprint.

Table 7: Overview of trees with NRZ encroached by the design footprint.

Encroachment Classification (AS4970 2025)	Count	Tree ID
Minor (<=10% Encroachment) Generally Acceptable	14	54, 61, 68, 76, 92, 94, 97, 99, 125, 126, 175, 178, 185, 247
Moderate (10% - 20% Encroachment) Generally Tolerable with Arborist Review	4	47, 53, 60, 65

Trees 47, 53, 60 and 65 have NRZ moderately encroached by the proposed building envelope. While these trees would be expected to remain viable throughout the less than 20% encroachment of their NRZ, future detailed designs within the building envelope must implement tree sensitive construction methods when designing and installing features within their NRZ.

The remaining trees proposed for retention do not have NRZ encroached by the design footprint and would remain viable throughout the design's implementation. It is recommended that:

- Trees that are unable to be retained through the development are removed prior to the commencement of construction but after the approval of final plans by the relevant authority and tree-owners.
- Prior to the commencement of any construction or demolition activities, a Tree Protection Specification (TPS) and Tree Protection Plan (TPP) in accordance with AS4970 (2025) is prepared outlining the procedure for protecting any impacted trees throughout the implementation of the endorsed design.

7 References

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8 Appendix 1: Site Map

Figure 3: Site Map – Existing Condition

9 Appendix 2: Tree Details

Table 8: Details of assessed trees

Tree ID	*Genus Species*	Common Name	Species Origin	Height (m)	Crown Spread (m)	Total DSH (cm)	DAB (cm)	Health	Structure	Maturity	ULE (years)	Arboricultural Value	Comments
1	*Pittosporum undulatum*	Sweet Pittosporum	Australian Native	4	2	9	10	Good	Good	Semi-mature	5 to 15	Low	
2	*Pittosporum undulatum*	Sweet Pittosporum	Australian Native	4	2	7	8	Good	Good	Semi-mature	5 to 15	Low	
3	*xCuprocyparis leylandii*	Leyland Cypress	Exotic	13	7	36.06	40	Good	Fair	Mature	15 to 40	Medium	Screen against back fence. Typical dbh recorded. 3m average spacing
4	*xCuprocyparis leylandii*	Leyland Cypress	Exotic	13	7	36.06	40	Good	Fair	Mature	15 to 40	Medium	Screen against back fence. Typical dbh recorded. 3m average spacing
5	*xCuprocyparis leylandii*	Leyland Cypress	Exotic	13	7	36.06	40	Good	Fair	Mature	15 to 40	Medium	Screen against back fence. Typical dbh recorded. 3m average spacing
6	*xCuprocyparis leylandii*	Leyland Cypress	Exotic	13	7	36.06	40	Good	Fair	Mature	15 to 40	Medium	Screen against back fence. Typical dbh recorded. 3m average spacing
7	*Hakea salicifolia*	Willow Hakea	Australian Native	4	3	12	16	Good	Fair	Semi-mature	5 to 15	Third Party Ownership	Hakea screen. Group of 13
8	*xCuprocyparis leylandii*	Leyland Cypress	Exotic	13	7	36.06	40	Good	Fair	Mature	15 to 40	Medium	Screen against back fence. Typical dbh recorded. 3m average spacing
9	*Pittosporum undulatum*	Sweet Pittosporum	Australian Native	5	3	13	15	Good	Fair	Semi-mature	5 to 15	Low	
10	*xCuprocyparis leylandii*	Leyland Cypress	Exotic	13	7	36.06	40	Good	Fair	Mature	15 to 40	Medium	Screen against back fence. Typical dbh recorded. 3m average spacing
11	*xCuprocyparis leylandii*	Leyland Cypress	Exotic	13	7	36.06	40	Good	Fair	Mature	15 to 40	Medium	Screen against back fence. Typical dbh recorded. 3m average spacing
12	*Pittosporum undulatum*	Sweet Pittosporum	Australian Native	4	3	10	14	Good	Fair	Semi-mature	5 to 15	Low	
13	*Eucalyptus cephalocarpa*	Silver-leaved Stringybark	Indigenous	14	8	69	75	Fair	Fair	Mature	5 to 15	High	Heabily decayed trunk on fence side
14	*xCuprocyparis leylandii*	Leyland Cypress	Exotic	13	7	36.06	40	Good	Fair	Mature	15 to 40	Medium	Screen against back fence. Typical dbh recorded. 3m average spacing

Tree ID	*Genus Species*	Common Name	Species Origin	Height (m)	Crown Spread (m)	Total DSH (cm)	DAB (cm)	Health	Structure	Maturity	ULE (years)	Arboricultural Value	Comments
15	*Melaleuca armillaris*	Giant Honey Myrtle	Australian Native	6	5	31.06	34	Fair	Fair	Mature	5 to 15	Low	
16	*xCuprocyparis leylandii*	Leyland Cypress	Exotic	13	7	36.06	40	Good	Fair	Mature	15 to 40	Medium	Screen against back fence. Typical dbh recorded. 3m average spacing
17	*xCuprocyparis leylandii*	Leyland Cypress	Exotic	13	7	36.06	40	Good	Fair	Mature	15 to 40	Medium	Screen against back fence. Typical dbh recorded. 3m average spacing
18	*xCuprocyparis leylandii*	Leyland Cypress	Exotic	13	7	36.06	40	Good	Fair	Mature	15 to 40	Medium	Screen against back fence. Typical dbh recorded. 3m average spacing
19	*xCuprocyparis leylandii*	Leyland Cypress	Exotic	13	7	36.06	40	Good	Fair	Mature	15 to 40	Medium	Screen against back fence. Typical dbh recorded. 3m average spacing
20	*xCuprocyparis leylandii*	Leyland Cypress	Exotic	13	7	36.06	40	Good	Fair	Mature	15 to 40	Medium	Screen against back fence. Typical dbh recorded. 3m average spacing
21	*Acacia mearnsii*	Black Wattle	Indigenous	13	11	66	74	Poor	Fair	Mature	5 to 15	Medium	Large wattle within screen.
22	*xCuprocyparis leylandii*	Leyland Cypress	Exotic	13	7	36.06	40	Good	Fair	Mature	15 to 40	Medium	Screen against back fence. Typical dbh recorded. 3m average spacing
23	*Pinus radiata*	Monterey Pine	Exotic	21	12	75	90	Good	Good	Mature	15 to 40	Third Party Ownership	
24	*Hakea salicifolia*	Willow Hakea	Australian Native	4	3	12	16	Good	Fair	Semi-mature	5 to 15	Third Party Ownership	Hakea screen. Group of 13
25	*xCuprocyparis leylandii*	Leyland Cypress	Exotic	14	9	65	70	Good	Fair	Mature	15 to 40	Medium	Larger individuals within screen collected as group
26	*Hakea salicifolia*	Willow Hakea	Australian Native	4	3	12	16	Good	Fair	Semi-mature	5 to 15	Third Party Ownership	Hakea screen. Group of 13
27	*Eucalyptus globoidea*	White Stringybark	Australian Native	17	16	117	136	Good	Fair	Mature	>40	High	Included bark stems
28	*xCuprocyparis leylandii*	Leyland Cypress	Exotic	14	9	65	70	Good	Fair	Mature	15 to 40	Medium	Larger individuals within screen collected as group
29	*Hakea salicifolia*	Willow Hakea	Australian Native	4	3	12	16	Good	Fair	Semi-mature	5 to 15	Third Party Ownership	Hakea screen. Group of 13
30	*xCuprocyparis leylandii*	Leyland Cypress	Exotic	7	6	30	35	Good	Fair	Mature	15 to 40	Medium	Smaller individuals within screen . Typical dbh recorded
31	*Hakea salicifolia*	Willow Hakea	Australian Native	4	3	12	16	Good	Fair	Semi-mature	5 to 15	Third Party Ownership	Hakea screen. Group of 13
32	*Eucalyptus globoidea*	White Stringybark	Australian Native	23	11	70	75	Fair	Fair	Mature	>40	High	

Tree ID	*Genus Species*	Common Name	Species Origin	Height (m)	Crown Spread (m)	Total DSH (cm)	DAB (cm)	Health	Structure	Maturity	ULE (years)	Arboricultural Value	Comments
33	*xCuprocyparis leylandii*	Leyland Cypress	Exotic	7	6	30	35	Good	Fair	Mature	15 to 40	Medium	Smaller individuals within screen . Typical dbh recorded
34	*Eucalyptus globoidea*	White Stringybark	Australian Native	22	11	57	65	Good	Good	Mature	>40	High	
35	*Eucalyptus globoidea*	White Stringybark	Australian Native	21	8	46	55	Good	Good	Mature	>40	High	
36	*Pyrus communis*	Common Pear	Exotic	7	4	25.46	26	Poor	Poor	Mature	<5	None	Ringbarked
37	*Hakea salicifolia*	Willow Hakea	Australian Native	4	3	12	16	Good	Fair	Semi-mature	5 to 15	Third Party Ownership	Hakea screen. Group of 13
38	*xCuprocyparis leylandii*	Leyland Cypress	Exotic	7	6	30	35	Good	Fair	Mature	15 to 40	Medium	Smaller individuals within screen . Typical dbh recorded
39	*Eucalyptus globoidea*	White Stringybark	Australian Native	23	11	59	70	Fair	Fair	Mature	15 to 40	High	One stem dead
40	*Hakea salicifolia*	Willow Hakea	Australian Native	4	3	12	16	Good	Fair	Semi-mature	5 to 15	Third Party Ownership	Hakea screen. Group of 13
41	*Eucalyptus globoidea*	White Stringybark	Australian Native	13	6	35	36	Good	Fair	Semi-mature	>40	Medium	
42	*xCuprocyparis leylandii*	Leyland Cypress	Exotic	14	69	65	70	Good	Fair	Mature	15 to 40	Medium	Larger individuals within screen collected as group
43	*Eucalyptus globoidea*	White Stringybark	Australian Native	25	9	47	55	Fair	Good	Mature	>40	High	
44	*Eucalyptus globoidea*	White Stringybark	Australian Native	7	3	17	20	Good	Fair	Semi-mature	>40	Low	
45	*Hakea salicifolia*	Willow Hakea	Australian Native	4	3	12	16	Good	Fair	Semi-mature	5 to 15	Third Party Ownership	Hakea screen. Group of 13
46	*Eucalyptus globoidea*	White Stringybark	Australian Native	5	6	28	34	Poor	Poor	Mature	<5	None	
47	*Eucalyptus globoidea*	White Stringybark	Australian Native	19	14	91.99	92	Fair	Fair	Mature	15 to 40	High	
48	*Eucalyptus globoidea*	White Stringybark	Australian Native	21	8	40.8	42	Good	Fair	Semi-mature	>40	Medium	
49	*xCuprocyparis leylandii*	Leyland Cypress	Exotic	7	6	30	35	Good	Fair	Mature	15 to 40	Medium	Smaller individuals within screen . Typical dbh recorded
50	*xCuprocyparis leylandii*	Leyland Cypress	Exotic	7	6	30	35	Good	Fair	Mature	15 to 40	Medium	Smaller individuals within screen . Typical dbh recorded
51	*Hakea salicifolia*	Willow Hakea	Australian Native	4	3	12	16	Good	Fair	Semi-mature	5 to 15	Third Party Ownership	Hakea screen. Group of 13

Tree ID	*Genus Species*	Common Name	Species Origin	Height (m)	Crown Spread (m)	Total DSH (cm)	DAB (cm)	Health	Structure	Maturity	ULE (years)	Arboricultural Value	Comments
52	*xCuprocyparis leylandii*	Leyland Cypress	Exotic	7	6	30	35	Good	Fair	Mature	15 to 40	Medium	Smaller individuals within screen . Typical dbh recorded
53	*xCuprocyparis leylandii*	Leyland Cypress	Exotic	14	9	65	70	Good	Fair	Mature	15 to 40	Medium	Larger individuals within screen collected as group
54	*xCuprocyparis leylandii*	Leyland Cypress	Exotic	14	9	65	70	Good	Fair	Mature	15 to 40	Medium	Larger individuals within screen collected as group
55	*Grevillea robusta*	Silky Oak	Australian Native	7	4	15	18	Good	Fair	Semi-mature	15 to 40	Low	
56	*xCuprocyparis leylandii*	Leyland Cypress	Exotic	7	6	30	35	Good	Fair	Mature	15 to 40	Medium	Smaller individuals within screen . Typical dbh recorded
57	*Hakea salicifolia*	Willow Hakea	Australian Native	4	3	12	16	Good	Fair	Semi-mature	5 to 15	Third Party Ownership	Hakea screen. Group of 13
58	*Eucalyptus globoidea*	White Stringybark	Australian Native	20	5	33	40	Good	Fair	Semi-mature	>40	Medium	
59	*Pittosporum undulatum*	Sweet Pittosporum	Australian Native	4	1	7.07	9	Fair	Fair	Semi-mature	5 to 15	Low	
60	*Eucalyptus globoidea*	White Stringybark	Australian Native	17	9	93	101	Good	Fair	Mature	>40	High	
61	*xCuprocyparis leylandii*	Leyland Cypress	Exotic	14	9	65	70	Good	Fair	Mature	15 to 40	Medium	Larger individuals within screen collected as group
62	*Eucalyptus globoidea*	White Stringybark	Australian Native	14	3	20	24	Fair	Good	Semi-mature	>40	Medium	
63	*Hakea salicifolia*	Willow Hakea	Australian Native	4	3	12	16	Good	Fair	Semi-mature	5 to 15	Third Party Ownership	Hakea screen. Group of 13
64	*xCuprocyparis leylandii*	Leyland Cypress	Exotic	6	4	26	28	Good	Fair	Mature	15 to 40	Medium	Screen. 2.4m spacings
65	*Eucalyptus globoidea*	White Stringybark	Australian Native	22	14	79	85	Good	Fair	Mature	>40	High	
66	*Eucalyptus globoidea*	White Stringybark	Australian Native	8	2	16	20	Fair	Fair	Semi-mature	>40	Low	
67	*Eucalyptus globoidea*	White Stringybark	Australian Native	6	2	13	15	Fair	Good	Semi-mature	>40	Low	
68	*Eucalyptus globoidea*	White Stringybark	Australian Native	16	9	46	54	Good	Fair	Mature	>40	Medium	
69	*xCuprocyparis leylandii*	Leyland Cypress	Exotic	7	6	30	35	Good	Fair	Mature	15 to 40	Medium	Smaller individuals within screen . Typical dbh recorded
70	*xCuprocyparis leylandii*	Leyland Cypress	Exotic	6	4	26	28	Good	Fair	Mature	15 to 40	Medium	Screen. 2.4m spacings

Tree ID	*Genus Species*	Common Name	Species Origin	Height (m)	Crown Spread (m)	Total DSH (cm)	DAB (cm)	Health	Structure	Maturity	ULE (years)	Arboricultural Value	Comments
71	*Hakea salicifolia*	Willow Hakea	Australian Native	4	3	12	16	Good	Fair	Semi-mature	5 to 15	Third Party Ownership	Hakea screen. Group of 13
72	*xCuprocyparis leylandii*	Leyland Cypress	Exotic	6	4	26	28	Good	Fair	Mature	15 to 40	Medium	Screen. 2.4m spacings
73	*xCuprocyparis leylandii*	Leyland Cypress	Exotic	7	6	30	35	Good	Fair	Mature	15 to 40	Medium	Smaller individuals within screen . Typical dbh recorded
74	*Hakea salicifolia*	Willow Hakea	Australian Native	4	3	12	16	Good	Fair	Semi-mature	5 to 15	Third Party Ownership	Hakea screen. Group of 13
75	*xCuprocyparis leylandii*	Leyland Cypress	Exotic	6	4	26	28	Good	Fair	Mature	15 to 40	Medium	Screen. 2.4m spacings
76	*Acer negundo*	Box Elder	Exotic	7	6	33.42	33	Fair	Fair	Mature	5 to 15	Low	
77	*xCuprocyparis leylandii*	Leyland Cypress	Exotic	6	4	26	28	Good	Fair	Mature	15 to 40	Medium	Screen. 2.4m spacings
78	*Pittosporum undulatum*	Sweet Pittosporum	Australian Native	5	3	13	17	Good	Fair	Semi-mature	5 to 15	Low	
79	*xCuprocyparis leylandii*	Leyland Cypress	Exotic	6	4	26	28	Good	Fair	Mature	15 to 40	Medium	Screen. 2.4m spacings
80	*Pittosporum undulatum*	Sweet Pittosporum	Australian Native	5	3	14.87	15	Good	Fair	Semi-mature	5 to 15	Low	
81	*Hakea salicifolia*	Willow Hakea	Australian Native	4	2	12.73	13	Good	Fair	Semi-mature	5 to 15	Low	Group of 2
82	*xCuprocyparis leylandii*	Leyland Cypress	Exotic	6	4	26	28	Good	Fair	Mature	15 to 40	Medium	Screen. 2.4m spacings
83	*Hakea salicifolia*	Willow Hakea	Australian Native	4	2	12.73	13	Good	Fair	Semi-mature	5 to 15	Low	Group of 2
84	*Pittosporum undulatum*	Sweet Pittosporum	Australian Native	6	3	16.28	17	Good	Fair	Semi-mature	5 to 15	Low	
85	*xCuprocyparis leylandii*	Leyland Cypress	Exotic	6	4	26	28	Good	Fair	Mature	15 to 40	Medium	Screen. 2.4m spacings
85	*xCuprocyparis leylandii*	Leyland Cypress	Exotic	6	4	26	28	Good	Fair	Mature	15 to 40	Medium	Screen. 2.4m spacings
87	*xCuprocyparis leylandii*	Leyland Cypress	Exotic	6	4	26	28	Good	Fair	Mature	15 to 40	Medium	Screen. 2.4m spacings
88	*xCuprocyparis leylandii*	Leyland Cypress	Exotic	6	4	26	28	Good	Fair	Mature	15 to 40	Medium	Screen. 2.4m spacings
89	*xCuprocyparis leylandii*	Leyland Cypress	Exotic	7	6	30	35	Good	Fair	Mature	15 to 40	Medium	Smaller individuals within screen . Typical dbh recorded
90	*xCuprocyparis leylandii*	Leyland Cypress	Exotic	6	4	26	28	Good	Fair	Mature	15 to 40	Medium	Screen. 2.4m spacings

Tree ID	*Genus Species*	Common Name	Species Origin	Height (m)	Crown Spread (m)	Total DSH (cm)	DAB (cm)	Health	Structure	Maturity	ULE (years)	Arboricultural Value	Comments
91	*xCuprocyparis leylandii*	Leyland Cypress	Exotic	7	5	32	36	Fair	Poor	Mature	15 to 40	Low	Smaller individuals within screen . Typical dbh recorded
92	*xCuprocyparis leylandii*	Leyland Cypress	Exotic	14	9	65	70	Good	Fair	Mature	15 to 40	Medium	Larger individuals within screen collected as group
93	*xCuprocyparis leylandii*	Leyland Cypress	Exotic	6	4	26	28	Good	Fair	Mature	15 to 40	Medium	Screen. 2.4m spacings
94	*xCuprocyparis leylandii*	Leyland Cypress	Exotic	14	9	65	70	Good	Fair	Mature	15 to 40	Medium	Larger individuals within screen collected as group
95	*xCuprocyparis leylandii*	Leyland Cypress	Exotic	9	6	37	42	Good	Good	Mature	15 to 40	Medium	
96	*xCuprocyparis leylandii*	Leyland Cypress	Exotic	6	4	26	28	Good	Fair	Mature	15 to 40	Medium	Screen. 2.4m spacings
97	*xCuprocyparis leylandii*	Leyland Cypress	Exotic	9	3	36	40	Good	Good	Mature	15 to 40	Medium	
98	*xCuprocyparis leylandii*	Leyland Cypress	Exotic	6	4	26	28	Good	Fair	Mature	15 to 40	Medium	Screen. 2.4m spacings
99	*Eucalyptus obliqua*	Messmate Stringybark	Indigenous	13	11	55	70	Fair	Fair	Mature	5 to 15	Third Party Ownership	
100	*xCuprocyparis leylandii*	Leyland Cypress	Exotic	7	6	30	35	Good	Fair	Mature	15 to 40	Medium	Smaller individuals within screen . Typical dbh recorded
101	*xCuprocyparis leylandii*	Leyland Cypress	Exotic	6	4	26	28	Good	Fair	Mature	15 to 40	Medium	Screen. 2.4m spacings
102	*Pittosporum undulatum*	Sweet Pittosporum	Australian Native	4	3	8	10	Fair	Fair	Semi-mature	5 to 15	Low	
103	*xCuprocyparis leylandii*	Leyland Cypress	Exotic	6	4	26	28	Good	Fair	Mature	15 to 40	Medium	Screen. 2.4m spacings
104	*Eucalyptus globulus*	Blue Gum	Australian Native	18	13	61	71	Good	Good	Mature	>40	High	
105	*xCuprocyparis leylandii*	Leyland Cypress	Exotic	7	6	30	35	Good	Fair	Mature	15 to 40	Medium	Smaller individuals within screen . Typical dbh recorded
106	*Pittosporum undulatum*	Sweet Pittosporum	Australian Native	5	2	7	9	Good	Fair	Semi-mature	5 to 15	Low	
107	*Pittosporum undulatum*	Sweet Pittosporum	Australian Native	5	3	14	15	Good	Good	Semi-mature	5 to 15	Low	
108	*xCuprocyparis leylandii*	Leyland Cypress	Exotic	6	4	26	28	Good	Fair	Mature	15 to 40	Medium	Screen. 2.4m spacings
109	*Hakea laurina*	Pincushion Hakea	Australian Native	4	2	8	10	Good	Fair	Semi-mature	5 to 15	Third Party Ownership	Group of 5 in adjacent property

Tree ID	*Genus Species*	Common Name	Species Origin	Height (m)	Crown Spread (m)	Total DSH (cm)	DAB (cm)	Health	Structure	Maturity	ULE (years)	Arboricultural Value	Comments
110	*xCuprocyparis leylandii*	Leyland Cypress	Exotic	7	6	30	35	Good	Fair	Mature	15 to 40	Medium	Smaller individuals within screen . Typical dbh recorded
111	*Pittosporum undulatum*	Sweet Pittosporum	Australian Native	5	3	14	17	Good	Fair	Semi-mature	5 to 15	Third Party Ownership	
112	*xCuprocyparis leylandii*	Leyland Cypress	Exotic	6	4	26	28	Good	Fair	Mature	15 to 40	Medium	Screen. 2.4m spacings
113	*Hakea laurina*	Pincushion Hakea	Australian Native	4	2	8	10	Good	Fair	Semi-mature	5 to 15	Third Party Ownership	Group of 5 in adjacent property
114	*xCuprocyparis leylandii*	Leyland Cypress	Exotic	7	6	30	35	Good	Fair	Mature	15 to 40	Medium	Smaller individuals within screen . Typical dbh recorded
115	*Hakea laurina*	Pincushion Hakea	Australian Native	4	2	8	10	Good	Fair	Semi-mature	5 to 15	Third Party Ownership	Group of 5 in adjacent property
116	*xCuprocyparis leylandii*	Leyland Cypress	Exotic	6	4	26	28	Good	Fair	Mature	15 to 40	Medium	Screen. 2.4m spacings
117	*Pyrus calleryana*	Callery Pear	Exotic	6	6	41	44	Good	Fair	Mature	15 to 40	Medium	
118	*Pyrus calleryana*	Callery Pear	Exotic	5	6	33	36	Good	Fair	Mature	15 to 40	Medium	
119	*Pyrus calleryana*	Callery Pear	Exotic	6	5	29	30	Good	Fair	Mature	15 to 40	Medium	
120	*xCuprocyparis leylandii*	Leyland Cypress	Exotic	7	6	30	35	Good	Fair	Mature	15 to 40	Medium	Smaller individuals within screen . Typical dbh recorded
121	*Hakea laurina*	Pincushion Hakea	Australian Native	4	2	8	10	Good	Fair	Semi-mature	5 to 15	Third Party Ownership	Group of 5 in adjacent property
122	*xCuprocyparis leylandii*	Leyland Cypress	Exotic	6	4	26	28	Good	Fair	Mature	15 to 40	Medium	Screen. 2.4m spacings
123	*Hakea laurina*	Pincushion Hakea	Australian Native	4	2	8	10	Good	Fair	Semi-mature	5 to 15	Third Party Ownership	Group of 5 in adjacent property
124	*Eucalyptus grandis*	Flooded Gum	Australian Native	10	9	47.2	54	Good	Fair	Mature	15 to 40	Medium	Suppressed by adjacent larger tree
125	*xCuprocyparis leylandii*	Leyland Cypress	Exotic	14	9	65	70	Good	Fair	Mature	15 to 40	Medium	Larger individuals within screen collected as group
126	*Eucalyptus botryoides*	Southern Mahogany	Australian Native	23	16	92	100	Good	Fair	Mature	15 to 40	High	Hybrid with saligna or grandis
127	*xCuprocyparis leylandii*	Leyland Cypress	Exotic	6	4	26	28	Good	Fair	Mature	15 to 40	Medium	Screen. 2.4m spacings
128	*Grevillea robusta*	Silky Oak	Australian Native	13	7	60	75	Fair	Poor	Mature	5 to 15	Medium	Cavity and decay at base . Really hollow
129	*xCuprocyparis leylandii*	Leyland Cypress	Exotic	6	4	26	28	Good	Fair	Mature	15 to 40	Medium	Screen. 2.4m spacings
130	*Pittosporum undulatum*	Sweet Pittosporum	Australian Native	7	6	22	24	Good	Fair	Mature	5 to 15	Low	

Tree ID	*Genus Species*	Common Name	Species Origin	Height (m)	Crown Spread (m)	Total DSH (cm)	DAB (cm)	Health	Structure	Maturity	ULE (years)	Arboricultural Value	Comments
131	*Ulmus sp.*	Elm	Exotic	11	9	52.33	58	Poor	Poor	Over-mature	0	None	Just suckers at base remain alive p
132	*Eucalyptus globulus*	Blue Gum	Australian Native	17	18	140	152	Fair	Poor	Mature	5 to 15	High	Severely decayed at base
133	*xCuprocyparis leylandii*	Leyland Cypress	Exotic	6	4	26	28	Good	Fair	Mature	15 to 40	Medium	Screen. 2.4m spacings
134	*xCuprocyparis leylandii*	Leyland Cypress	Exotic	7	6	30	35	Good	Fair	Mature	15 to 40	Medium	Smaller individuals within screen . Typical dbh recorded
135	*xCuprocyparis leylandii*	Leyland Cypress	Exotic	6	4	26	28	Good	Fair	Mature	15 to 40	Medium	Screen. 2.4m spacings
136	*xCuprocyparis leylandii*	Leyland Cypress	Exotic	6	4	26	28	Good	Fair	Mature	15 to 40	Medium	Screen. 2.4m spacings
137	*xCuprocyparis leylandii*	Leyland Cypress	Exotic	6	4	26	28	Good	Fair	Mature	15 to 40	Medium	Screen. 2.4m spacings
138	*Unknown sp.*	Unknown	Exotic	8	6	35	40	Dead	Fair	Over-mature	0	None	
139	*Grevillea robusta*	Silky Oak	Australian Native	17	6	47	55	Fair	Fair	Mature	5 to 15	Medium	
140	*xCuprocyparis leylandii*	Leyland Cypress	Exotic	5	3	33.53	35	Fair	Fair	Mature	5 to 15	Medium	2.5m spacings
141	*xCuprocyparis leylandii*	Leyland Cypress	Exotic	5	3	33.53	35	Fair	Fair	Mature	5 to 15	Medium	2.5m spacings
142	*xCuprocyparis leylandii*	Leyland Cypress	Exotic	5	3	33.53	35	Fair	Fair	Mature	5 to 15	Medium	2.5m spacings
143	*xCuprocyparis leylandii*	Leyland Cypress	Exotic	5	3	33.53	35	Fair	Fair	Mature	5 to 15	Medium	2.5m spacings
144	*xCuprocyparis leylandii*	Leyland Cypress	Exotic	5	3	33.53	35	Fair	Fair	Mature	5 to 15	Medium	2.5m spacings
145	*Pittosporum undulatum*	Sweet Pittosporum	Australian Native	6	3	14	16	Fair	Fair	Semi-mature	5 to 15	Third Party Ownership	
146	*xCuprocyparis leylandii*	Leyland Cypress	Exotic	5	3	33.53	35	Fair	Fair	Mature	5 to 15	Medium	2.5m spacings
147	*xCuprocyparis leylandii*	Leyland Cypress	Exotic	5	3	33.53	35	Fair	Fair	Mature	5 to 15	Medium	2.5m spacings
148	*xCuprocyparis leylandii*	Leyland Cypress	Exotic	5	3	33.53	35	Fair	Fair	Mature	5 to 15	Medium	2.5m spacings
149	*xCuprocyparis leylandii*	Leyland Cypress	Exotic	5	3	33.53	35	Fair	Fair	Mature	5 to 15	Medium	2.5m spacings
150	*xCuprocyparis leylandii*	Leyland Cypress	Exotic	5	3	33.53	35	Fair	Fair	Mature	5 to 15	Medium	2.5m spacings

Tree ID	*Genus Species*	Common Name	Species Origin	Height (m)	Crown Spread (m)	Total DSH (cm)	DAB (cm)	Health	Structure	Maturity	ULE (years)	Arboricultural Value	Comments
151	*xCuprocyparis leylandii*	Leyland Cypress	Exotic	5	3	33.53	35	Fair	Fair	Mature	5 to 15	Medium	2.5m spacings
152	*xCuprocyparis leylandii*	Leyland Cypress	Exotic	5	3	33.53	35	Fair	Fair	Mature	5 to 15	Medium	2.5m spacings
153	*xCuprocyparis leylandii*	Leyland Cypress	Exotic	5	3	33.53	35	Fair	Fair	Mature	5 to 15	Medium	2.5m spacings
154	*xCuprocyparis leylandii*	Leyland Cypress	Exotic	5	3	33.53	35	Fair	Fair	Mature	5 to 15	Medium	2.5m spacings
155	*Fraxinus angustifolia "Raywood"*	Claret Ash	Exotic	10	5	25	40	Fair	Poor	Mature	<5	None	
156	*Pittosporum undulatum*	Sweet Pittosporum	Australian Native	5	3	20	22	Fair	Fair	Semi-mature	5 to 15	Third Party Ownership	
157	*Pittosporum undulatum*	Sweet Pittosporum	Australian Native	6	3	14	13	Fair	Fair	Semi-mature	5 to 15	Third Party Ownership	
158	*Eucalyptus grandis*	Flooded Gum	Australian Native	21	11	69	77	Good	Fair	Mature	15 to 40	Medium	
159	*Pittosporum undulatum*	Sweet Pittosporum	Australian Native	7	5	24.08	26	Fair	Fair	Semi-mature	5 to 15	Low	
160	*Melaleuca ericifolia*	Swamp Paperbark	Australian Native	5	2	13	15	Fair	Fair	Semi-mature	5 to 15	Low	
161	*Betula sp.*	Birch	Exotic	5	3	15	16	Poor	Fair	Semi-mature	5 to 15	Low	B.utilis
162	*Malus xdomestica*	Apple	Exotic	4	3	11.66	13	Poor	Fair	Semi-mature	5 to 15	Low	
163	*Pittosporum tenuifolium*	Kohuhu	Exotic	7	5	26.57	26	Good	Fair	Mature	5 to 15	Low	
164	*Eucalyptus fulgens*	Dandenong Scent-bark	Indigenous	6	5	30	35	Good	Fair	Semi-mature	>40	Medium	One trunk previously removed
165	*xCuprocyparis leylandii*	Leyland Cypress	Exotic	6	3	17	19	Good	Fair	Mature	15 to 40	Medium	Screen. 1.5m spacings
166	*Pittosporum undulatum*	Sweet Pittosporum	Australian Native	5	3	16.58	17	Fair	Fair	Semi-mature	5 to 15	Low	Clump collected as one
167	*xCuprocyparis leylandii*	Leyland Cypress	Exotic	6	3	17	19	Good	Fair	Mature	15 to 40	Medium	Screen. 1.5m spacings
168	*xCuprocyparis leylandii*	Leyland Cypress	Exotic	6	3	17	19	Good	Fair	Mature	15 to 40	Medium	Screen. 1.5m spacings
169	*xCuprocyparis leylandii*	Leyland Cypress	Exotic	6	3	17	19	Good	Fair	Mature	15 to 40	Medium	Screen. 1.5m spacings
170	*xCuprocyparis leylandii*	Leyland Cypress	Exotic	6	3	17	19	Good	Fair	Mature	15 to 40	Medium	Screen. 1.5m spacings

Tree ID	*Genus Species*	Common Name	Species Origin	Height (m)	Crown Spread (m)	Total DSH (cm)	DAB (cm)	Health	Structure	Maturity	ULE (years)	Arboricultural Value	Comments
171	*Eucalyptus bicostata*	Eurabbie	Australian Native	26	22	119	135	Good	Fair	Mature	>40	High	
172	*Callistemon viminalis*	Weeping Bottle Brush	Australian Native	4	3	16.64	18	Fair	Fair	Mature	5 to 15	Low	
173	*Camellia japonica*	Camellia	Exotic	4	3	7	8	Good	Fair	Semi-mature	5 to 15	Low	
174	*Pittosporum undulatum*	Sweet Pittosporum	Australian Native	6	3	15	18	Poor	Fair	Semi-mature	<5	None	
175	*Melaleuca ericifolia*	Swamp Paperbark	Australian Native	7	3	22	24	Fair	Fair	Mature	5 to 15	Low	
176	*Olea europaea*	European Olive	Exotic	7	5	25.28	26	Fair	Fair	Mature	15 to 40	Medium	
177	*Eucalyptus globulus*	Blue Gum	Australian Native	7	3	52.2	57	Poor	Poor	Over-mature	<5	None	Regrowth from standing stump
178	*Melaleuca ericifolia*	Swamp Paperbark	Australian Native	6	2	11	13	Poor	Fair	Semi-mature	<5	None	
179	*Eucalyptus globulus*	Blue Gum	Australian Native	27	25	135	150	Good	Fair	Mature	15 to 40	Third Party Ownership	
180	*Eucalyptus sp.*	Gum	Australian Native	18	5	47.17	55	Dead	Fair	Over-mature	0	Third Party Ownership	
181	*Pyrus calleryana*	Callery Pear	Exotic	7	7	34	38	Good	Fair	Mature	15 to 40	Medium	
182	*Pyrus calleryana*	Callery Pear	Exotic	9	5	32	35	Good	Fair	Mature	15 to 40	Medium	
183	*Pittosporum undulatum*	Sweet Pittosporum	Australian Native	5	3	13	14	Fair	Fair	Semi-mature	5 to 15	Third Party Ownership	
184	*Aesculus hippocastanum*	Horse Chestnut	Exotic	6	6	35.81	36	Fair	Fair	Mature	5 to 15	Medium	
185	*Eucalyptus obliqua*	Messmate Stringybark	Indigenous	18	15	67.08	75	Good	Fair	Mature	>40	Third Party Ownership	
186	*Laurus nobilis*	Bay Tree	Exotic	5	3	10.82	12	Good	Fair	Semi-mature	5 to 15	Low	
187	*Pyrus calleryana*	Callery Pear	Exotic	8	7	35	37	Good	Fair	Mature	15 to 40	Medium	
188	*Betula sp.*	Birch	Exotic	10	7	29	34	Good	Fair	Mature	15 to 40	Medium	B.utilis
189	*Olea europaea*	European Olive	Exotic	9	3	26	33	Good	Fair	Mature	>40	Medium	
190	*Melaleuca ericifolia*	Swamp Paperbark	Australian Native	6	3	27.13	27	Fair	Fair	Mature	5 to 15	Low	
191	*Acer saccharinum*	Silver Maple	Exotic	5	2	14.21	16	Poor	Fair	Semi-mature	<5	None	
192	*Pyrus calleryana*	Callery Pear	Exotic	9	8	36	42	Good	Fair	Mature	15 to 40	Medium	
193	*Melaleuca ericifolia*	Swamp Paperbark	Australian Native	6	5	27.6	30	Fair	Fair	Mature	5 to 15	Low	
194	*Liriodendron tulipifera*	Tulip Tree	Exotic	10	5	32	38	Fair	Fair	Mature	5 to 15	Medium	Cavity and decay on trunk

Tree ID	*Genus Species*	Common Name	Species Origin	Height (m)	Crown Spread (m)	Total DSH (cm)	DAB (cm)	Health	Structure	Maturity	ULE (years)	Arboricultural Value	Comments
195	*Melaleuca ericifolia*	Swamp Paperbark	Australian Native	6	4	23	26	Fair	Fair	Mature	5 to 15	Low	
196	*Aesculus hippocastanum*	Horse Chestnut	Exotic	3	3	14	16	Fair	Fair	Semi-mature	5 to 15	Low	
197	*Eucalyptus ovata*	Swamp Gum	Indigenous	23	24	116	125	Poor	Fair	Over-mature	0	None	Almost dead. Potentially e.bunyip
198	*Eucalyptus camaldulensis*	River Red Gum	Indigenous	19	14	90	115	Good	Fair	Mature	>40	Third Party Ownership	
199	*Pyrus calleryana*	Callery Pear	Exotic	9	8	32	36	Good	Poor	Mature	5 to 15	Medium	Previous stem failure. Large cavity on trunk
200	*Pyrus calleryana*	Callery Pear	Exotic	9	10	44	48	Good	Fair	Mature	15 to 40	Medium	
201	*Pinus pinaster*	Maritime Pine	Exotic	15	7	45	52	Fair	Poor	Mature	<5	None	Major trunk lea with heave. Potentially unstable
202	*Platanus xacerifolia*	London Plane	Exotic	10	9	31	35	Fair	Good	Semi-mature	>40	Medium	
203	*Pyrus calleryana*	Callery Pear	Exotic	9	9	35	39	Good	Fair	Mature	15 to 40	Medium	Previous branch failure
204	*Eucalyptus bicostata*	Eurabbie	Australian Native	22	15	80	95	Good	Fair	Mature	>40	High	
205	*Syzygium paniculatum*	Magenta Cherry	Australian Native	11	9	42.17	45	Good	Poor	Mature	15 to 40	Medium	
206	*Eucalyptus ovata*	Swamp Gum	Indigenous	13	6	33	37	Fair	Fair	Semi-mature	15 to 40	Medium	
207	*Pittosporum undulatum*	Sweet Pittosporum	Australian Native	5	3	10	14	Fair	Fair	Semi-mature	5 to 15	Low	Group of self sets adjacent to front boundary
208	*Pittosporum undulatum*	Sweet Pittosporum	Australian Native	6	2	12	14	Good	Fair	Semi-mature	5 to 15	Third Party Ownership	
209	*Melaleuca ericifolia*	Swamp Paperbark	Australian Native	5	1	9.22	10	Fair	Fair	Semi-mature	5 to 15	Low	
210	*Pyrus calleryana*	Callery Pear	Exotic	10	10	46	52	Good	Fair	Mature	15 to 40	Medium	
211	*Pittosporum undulatum*	Sweet Pittosporum	Australian Native	5	3	10	14	Fair	Fair	Semi-mature	5 to 15	Low	Group of self sets adjacent to front boundary
212	*Eucalyptus globoidea*	White Stringybark	Australian Native	21	15	77	88	Fair	Fair	Mature	>40	High	
213	*Pittosporum undulatum*	Sweet Pittosporum	Australian Native	5	3	10	14	Fair	Fair	Semi-mature	5 to 15	Low	Group of self sets adjacent to front boundary
214	*Pittosporum undulatum*	Sweet Pittosporum	Australian Native	5	3	10	14	Fair	Fair	Semi-mature	5 to 15	Low	Group of self sets adjacent to front boundary
215	*Pittosporum undulatum*	Sweet Pittosporum	Australian Native	6	2	12	14	Good	Fair	Semi-mature	5 to 15	Third Party Ownership	
216	*Pittosporum undulatum*	Sweet Pittosporum	Australian Native	5	3	10	14	Fair	Fair	Semi-mature	5 to 15	Low	Group of self sets adjacent to front boundary

Tree ID	*Genus Species*	Common Name	Species Origin	Height (m)	Crown Spread (m)	Total DSH (cm)	DAB (cm)	Health	Structure	Maturity	ULE (years)	Arboricultural Value	Comments
217	*Pittosporum undulatum*	Sweet Pittosporum	Australian Native	5	3	10	14	Fair	Fair	Semi-mature	5 to 15	Low	Group of self sets adjacent to front boundary
218	*Melaleuca ericifolia*	Swamp Paperbark	Australian Native	5	4	15	17	Fair	Fair	Mature	5 to 15	Low	
219	*Eucalyptus sp.*	Gum	Australian Native	8	5	56.92	60	Dead	Fair	Over-mature	0	None	
220	*Pinus pinaster*	Maritime Pine	Exotic	14	5	41	46	Good	Poor	Mature	5 to 15	Low	Major trunk lean. Stability unclear
221	*Eucalyptus sp.*	Gum	Australian Native	8	2	25	28	Dead	Fair	Over-mature	0	None	
222	*Pittosporum undulatum*	Sweet Pittosporum	Australian Native	5	3	10	14	Fair	Fair	Semi-mature	5 to 15	Low	Group of self sets adjacent to front boundary
223	*Pittosporum undulatum*	Sweet Pittosporum	Australian Native	5	3	10	14	Fair	Fair	Semi-mature	5 to 15	Low	Group of self sets adjacent to front boundary
224	*Quercus rubra*	Red Oak	Exotic	9	5	23	27	Good	Fair	Semi-mature	>40	Medium	
225	*Pittosporum undulatum*	Sweet Pittosporum	Australian Native	5	3	10	14	Fair	Fair	Semi-mature	5 to 15	Low	Group of self sets adjacent to front boundary
226	*Pittosporum undulatum*	Sweet Pittosporum	Australian Native	5	3	10	14	Fair	Fair	Semi-mature	5 to 15	Low	Group of self sets adjacent to front boundary
227	*Pittosporum undulatum*	Sweet Pittosporum	Australian Native	5	3	10	14	Fair	Fair	Semi-mature	5 to 15	Low	Group of self sets adjacent to front boundary
228	*Melaleuca ericifolia*	Swamp Paperbark	Australian Native	5	1	7	8	Good	Fair	Semi-mature	5 to 15	Low	
229	*Eucalyptus bicostata*	Eurabbie	Australian Native	25	11	88	104	Good	Fair	Mature	>40	High	
230	*Pittosporum undulatum*	Sweet Pittosporum	Australian Native	6	2	12	14	Good	Fair	Semi-mature	5 to 15	Third Party Ownership	
231	*Pittosporum undulatum*	Sweet Pittosporum	Australian Native	5	3	10	14	Fair	Fair	Semi-mature	5 to 15	Low	Group of self sets adjacent to front boundary
232	*Pittosporum undulatum*	Sweet Pittosporum	Australian Native	5	3	10	14	Fair	Fair	Semi-mature	5 to 15	Low	Group of self sets adjacent to front boundary
233	*Pittosporum undulatum*	Sweet Pittosporum	Australian Native	5	3	10	14	Fair	Fair	Semi-mature	5 to 15	Low	Group of self sets adjacent to front boundary
234	*Eucalyptus bicostata*	Eurabbie	Australian Native	24	15	104	118	Good	Fair	Mature	>40	High	
235	*Pittosporum undulatum*	Sweet Pittosporum	Australian Native	5	3	10	14	Fair	Fair	Semi-mature	5 to 15	Low	Group of self sets adjacent to front boundary
236	*Pittosporum undulatum*	Sweet Pittosporum	Australian Native	7	5	30.07	34	Good	Fair	Mature	5 to 15	Low	
237	*Pittosporum undulatum*	Sweet Pittosporum	Australian Native	5	3	10	14	Fair	Fair	Semi-mature	5 to 15	Low	Group of self sets adjacent to front boundary

Tree ID	*Genus Species*	Common Name	Species Origin	Height (m)	Crown Spread (m)	Total DSH (cm)	DAB (cm)	Health	Structure	Maturity	ULE (years)	Arboricultural Value	Comments
238	*Pittosporum undulatum*	Sweet Pittosporum	Australian Native	5	3	10	14	Fair	Fair	Semi-mature	5 to 15	Low	Group of self sets adjacent to front boundary
239	*Pittosporum undulatum*	Sweet Pittosporum	Australian Native	5	3	10	14	Fair	Fair	Semi-mature	5 to 15	Low	Group of self sets adjacent to front boundary
240	*Hesperocyparis lusitanica*	Mexican Cypress	Exotic	14	6	33	37	Good	Good	Semi-mature	15 to 40	Medium	
241	*Pittosporum undulatum*	Sweet Pittosporum	Australian Native	5	3	10	14	Fair	Fair	Semi-mature	5 to 15	Low	Group of self sets adjacent to front boundary
242	*Pittosporum undulatum*	Sweet Pittosporum	Australian Native	5	3	10	14	Fair	Fair	Semi-mature	5 to 15	Low	Group of self sets adjacent to front boundary
243	*Corymbia maculata*	Spotted Gum	Australian Native	9	4	23	26	Good	Fair	Semi-mature	15 to 40	Low	
244	*Eucalyptus globoidea*	White Stringybark	Australian Native	8	5	21.4	22	Fair	Poor	Semi-mature	5 to 15	Low	
245	*Pittosporum undulatum*	Sweet Pittosporum	Australian Native	5	3	10	14	Fair	Fair	Semi-mature	5 to 15	Low	Group of self sets adjacent to front boundary
246	*Pittosporum undulatum*	Sweet Pittosporum	Australian Native	5	3	10	14	Fair	Fair	Semi-mature	5 to 15	Low	Group of self sets adjacent to front boundary
247	*Pittosporum undulatum*	Sweet Pittosporum	Australian Native	4	1	7	9	Fair	Fair	Semi-mature	5 to 15	Third Party Ownership	
248	*Pittosporum undulatum*	Sweet Pittosporum	Australian Native	5	3	10	14	Fair	Fair	Semi-mature	5 to 15	Low	Group of self sets adjacent to front boundary
249	*Pittosporum undulatum*	Sweet Pittosporum	Australian Native	4	4	16	20	Fair	Fair	Semi-mature	5 to 15	Third Party Ownership	
250	*Pittosporum undulatum*	Sweet Pittosporum	Australian Native	4	3	15	16	Good	Fair	Semi-mature	5 to 15	Low	
251	*Pittosporum undulatum*	Sweet Pittosporum	Australian Native	4	4	15	18	Poor	Fair	Semi-mature	5 to 15	Third Party Ownership	
252	*Pittosporum undulatum*	Sweet Pittosporum	Australian Native	5	3	10	14	Fair	Fair	Semi-mature	5 to 15	Low	Group of self sets adjacent to front boundary
253	*Pittosporum undulatum*	Sweet Pittosporum	Australian Native	5	3	16	17	Fair	Fair	Semi-mature	5 to 15	Third Party Ownership	Right on fenceline
254	*Pittosporum undulatum*	Sweet Pittosporum	Australian Native	5	3	10	14	Fair	Fair	Semi-mature	5 to 15	Low	Group of self sets adjacent to front boundary
255	*Eucalyptus radiata*	Narrow-leaved Peppermint	Indigenous	10	9	63	75	Fair	Fair	Mature	15 to 40	Medium	
256	*Pittosporum undulatum*	Sweet Pittosporum	Australian Native	5	2	9	12	Fair	Fair	Semi-mature	5 to 15	Third Party Ownership	
257	*Pittosporum undulatum*	Sweet Pittosporum	Australian Native	4	2	7	9	Fair	Fair	Semi-mature	5 to 15	Third Party Ownership	Group of semi mature self sets
258	*Pittosporum undulatum*	Sweet Pittosporum	Australian Native	5	3	10	14	Fair	Fair	Semi-mature	5 to 15	Low	Group of self sets adjacent to front boundary

Tree ID	*Genus Species*	Common Name	Species Origin	Height (m)	Crown Spread (m)	Total DSH (cm)	DAB (cm)	Health	Structure	Maturity	ULE (years)	Arboricultural Value	Comments
259	*Pittosporum undulatum*	Sweet Pittosporum	Australian Native	4	2	7	9	Fair	Fair	Semi-mature	5 to 15	Third Party Ownership	Group of semi mature self sets
260	*Exocarpos cupressiformis*	Cherry Ballart	Indigenous	4	2	9.9	10	Fair	Fair	Semi-mature	5 to 15	Third Party Ownership	
261	*Pittosporum undulatum*	Sweet Pittosporum	Australian Native	4	1	7	9	Fair	Fair	Semi-mature	5 to 15	Third Party Ownership	
262	*Pittosporum undulatum*	Sweet Pittosporum	Australian Native	5	3	10	14	Fair	Fair	Semi-mature	5 to 15	Low	Group of self sets adjacent to front boundary
263	*Pittosporum undulatum*	Sweet Pittosporum	Australian Native	5	3	10	14	Fair	Fair	Semi-mature	5 to 15	Low	Group of self sets adjacent to front boundary
264	*Pittosporum undulatum*	Sweet Pittosporum	Australian Native	4	2	7	9	Fair	Fair	Semi-mature	5 to 15	Third Party Ownership	Group of semi mature self sets
265	*Pittosporum undulatum*	Sweet Pittosporum	Australian Native	4	3	13	16	Fair	Fair	Semi-mature	5 to 15	Third Party Ownership	
266	*Pittosporum undulatum*	Sweet Pittosporum	Australian Native	5	3	10	14	Fair	Fair	Semi-mature	5 to 15	Low	Group of self sets adjacent to front boundary
267	*Pittosporum undulatum*	Sweet Pittosporum	Australian Native	4	2	7	9	Fair	Fair	Semi-mature	5 to 15	Third Party Ownership	Group of semi mature self sets
268	*Pittosporum undulatum*	Sweet Pittosporum	Australian Native	7	5	21	25	Good	Fair	Semi-mature	5 to 15	Low	
269	*Pittosporum undulatum*	Sweet Pittosporum	Australian Native	5	4	15	17	Good	Fair	Semi-mature	5 to 15	Third Party Ownership	
270	*Pittosporum undulatum*	Sweet Pittosporum	Australian Native	5	3	12.73	13	Fair	Fair	Semi-mature	5 to 15	Third Party Ownership	
271	*Pittosporum undulatum*	Sweet Pittosporum	Australian Native	3	2	6	8	Poor	Fair	Semi-mature	<5	Third Party Ownership	
272	*Eucalyptus sp.*	Gum	Australian Native	5	1	37	43	Dead	Poor	Over-mature	0	Third Party Ownership	
273	*Pittosporum undulatum*	Sweet Pittosporum	Australian Native	4	2	7	9	Fair	Fair	Semi-mature	5 to 15	Third Party Ownership	Group of semi mature self sets
274	*Pittosporum undulatum*	Sweet Pittosporum	Australian Native	4	2	7	9	Fair	Fair	Semi-mature	5 to 15	Third Party Ownership	Group of semi mature self sets
275	*Pittosporum undulatum*	Sweet Pittosporum	Australian Native	5	3	13	15	Fair	Fair	Semi-mature	5 to 15	Third Party Ownership	Group of self sets in road reserve
276	*Pittosporum undulatum*	Sweet Pittosporum	Australian Native	5	3	13	15	Fair	Fair	Semi-mature	5 to 15	Third Party Ownership	Group of self sets in road reserve
277	*Pittosporum undulatum*	Sweet Pittosporum	Australian Native	5	3	13	15	Fair	Fair	Semi-mature	5 to 15	Third Party Ownership	Group of self sets in road reserve
278	*Pittosporum undulatum*	Sweet Pittosporum	Australian Native	4	3	13.93	15	Fair	Fair	Semi-mature	5 to 15	Third Party Ownership	
279	*Pittosporum undulatum*	Sweet Pittosporum	Australian Native	4	2	9	10	Fair	Fair	Semi-mature	5 to 15	Third Party Ownership	

Tree ID	*Genus Species*	Common Name	Species Origin	Height (m)	Crown Spread (m)	Total DSH (cm)	DAB (cm)	Health	Structure	Maturity	ULE (years)	Arboricultural Value	Comments
280	*Pittosporum undulatum*	Sweet Pittosporum	Australian Native	5	3	13	15	Fair	Fair	Semi-mature	5 to 15	Third Party Ownership	Group of self sets in road reserve
281	*Pittosporum undulatum*	Sweet Pittosporum	Australian Native	4	2	7	9	Fair	Fair	Semi-mature	5 to 15	Third Party Ownership	Group of semi mature self sets
282	*Pittosporum undulatum*	Sweet Pittosporum	Australian Native	5	3	13	15	Fair	Fair	Semi-mature	5 to 15	Third Party Ownership	Group of self sets in road reserve
283	*Pittosporum undulatum*	Sweet Pittosporum	Australian Native	5	2	12	14	Good	Fair	Semi-mature	5 to 15	Third Party Ownership	
284	*Pittosporum undulatum*	Sweet Pittosporum	Australian Native	5	3	13	15	Fair	Fair	Semi-mature	5 to 15	Third Party Ownership	Group of self sets in road reserve
285	*Exocarpos cupressiformis*	Cherry Ballart	Indigenous	4	3	18.38	20	Fair	Fair	Semi-mature	5 to 15	Third Party Ownership	
286	*Melaleuca ericifolia*	Swamp Paperbark	Australian Native	5	2	10.63	11	Good	Fair	Semi-mature	15 to 40	Third Party Ownership	
287	*Pittosporum undulatum*	Sweet Pittosporum	Australian Native	5	3	13	15	Fair	Fair	Semi-mature	5 to 15	Third Party Ownership	Group of self sets in road reserve
288	*Pittosporum undulatum*	Sweet Pittosporum	Australian Native	5	3	13	15	Fair	Fair	Semi-mature	5 to 15	Third Party Ownership	Group of self sets in road reserve
289	*Pittosporum undulatum*	Sweet Pittosporum	Australian Native	4	2	7	9	Fair	Fair	Semi-mature	5 to 15	Third Party Ownership	Group of semi mature self sets
290	*Melaleuca ericifolia*	Swamp Paperbark	Australian Native	3	1	7.81	9	Fair	Fair	Semi-mature	5 to 15	Third Party Ownership	
291	*Pittosporum undulatum*	Sweet Pittosporum	Australian Native	4	2	7	9	Fair	Fair	Semi-mature	5 to 15	Third Party Ownership	Group of semi mature self sets
292	*Pittosporum undulatum*	Sweet Pittosporum	Australian Native	5	5	23	26	Good	Fair	Semi-mature	5 to 15	Third Party Ownership	
293	*Pittosporum undulatum*	Sweet Pittosporum	Australian Native	4	2	7	9	Fair	Fair	Semi-mature	5 to 15	Third Party Ownership	Group of semi mature self sets
294	*Pittosporum undulatum*	Sweet Pittosporum	Australian Native	4	2	7	9	Fair	Fair	Semi-mature	5 to 15	Third Party Ownership	Group of semi mature self sets
295	*Pittosporum undulatum*	Sweet Pittosporum	Australian Native	5	3	13	15	Fair	Fair	Semi-mature	5 to 15	Third Party Ownership	Group of self sets in road reserve
296	*Pittosporum undulatum*	Sweet Pittosporum	Australian Native	5	3	13	15	Fair	Fair	Semi-mature	5 to 15	Third Party Ownership	Group of self sets in road reserve
297	*Pittosporum undulatum*	Sweet Pittosporum	Australian Native	5	3	13	15	Fair	Fair	Semi-mature	5 to 15	Third Party Ownership	Group of self sets in road reserve
298	*Pittosporum undulatum*	Sweet Pittosporum	Australian Native	5	3	13	15	Fair	Fair	Semi-mature	5 to 15	Third Party Ownership	Group of self sets in road reserve
299	*Melaleuca ericifolia*	Swamp Paperbark	Australian Native	5	2	10.63	11	Good	Fair	Semi-mature	15 to 40	Third Party Ownership	
300	*Pittosporum undulatum*	Sweet Pittosporum	Australian Native	6	6	26	30	Good	Fair	Mature	5 to 15	Third Party Ownership	

Tree ID	*Genus Species*	Common Name	Species Origin	Height (m)	Crown Spread (m)	Total DSH (cm)	DAB (cm)	Health	Structure	Maturity	ULE (years)	Arboricultural Value	Comments
301	*Pittosporum undulatum*	Sweet Pittosporum	Australian Native	5	3	13	15	Fair	Fair	Semi-mature	5 to 15	Third Party Ownership	Group of self sets in road reserve
302	*Pittosporum undulatum*	Sweet Pittosporum	Australian Native	4	2	7	9	Fair	Fair	Semi-mature	5 to 15	Third Party Ownership	Group of semi mature self sets
303	*Pittosporum undulatum*	Sweet Pittosporum	Australian Native	5	3	13	15	Fair	Fair	Semi-mature	5 to 15	Third Party Ownership	Group of self sets in road reserve
304	*Pittosporum undulatum*	Sweet Pittosporum	Australian Native	5	3	13	15	Fair	Fair	Semi-mature	5 to 15	Third Party Ownership	Group of self sets in road reserve
305	*Pittosporum undulatum*	Sweet Pittosporum	Australian Native	5	3	13	15	Fair	Fair	Semi-mature	5 to 15	Third Party Ownership	Group of self sets in road reserve
306	*Pittosporum undulatum*	Sweet Pittosporum	Australian Native	5	3	13	15	Fair	Fair	Semi-mature	5 to 15	Third Party Ownership	Group of self sets in road reserve
307	*Pittosporum undulatum*	Sweet Pittosporum	Australian Native	5	3	13	15	Fair	Fair	Semi-mature	5 to 15	Third Party Ownership	Group of self sets in road reserve
308	*Pittosporum undulatum*	Sweet Pittosporum	Australian Native	5	3	13	15	Fair	Fair	Semi-mature	5 to 15	Third Party Ownership	Group of self sets in road reserve
309	*Pittosporum undulatum*	Sweet Pittosporum	Australian Native	5	3	13	15	Fair	Fair	Semi-mature	5 to 15	Third Party Ownership	Group of self sets in road reserve

10 Appendix 3: NRZ and SRZ Details

Table 9: 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	*Pittosporum undulatum*	Sweet Pittosporum	1.5	2	12.566
2	*Pittosporum undulatum*	Sweet Pittosporum	1.5	2	12.566
3	*xCuprocyparis leylandii*	Leyland Cypress	2.25	4.33	58.901
4	*xCuprocyparis leylandii*	Leyland Cypress	2.25	4.33	58.901
5	*xCuprocyparis leylandii*	Leyland Cypress	2.25	4.33	58.901
6	*xCuprocyparis leylandii*	Leyland Cypress	2.25	4.33	58.901
7	*Hakea salicifolia*	Willow Hakea	1.53	2	12.566
8	*xCuprocyparis leylandii*	Leyland Cypress	2.25	4.33	58.901
9	*Pittosporum undulatum*	Sweet Pittosporum	1.5	2	12.566
10	*xCuprocyparis leylandii*	Leyland Cypress	2.25	4.33	58.901
11	*xCuprocyparis leylandii*	Leyland Cypress	2.25	4.33	58.901
12	*Pittosporum undulatum*	Sweet Pittosporum	1.5	2	12.566
13	*Eucalyptus cephalocarpa*	Silver-leaved Stringybark	2.93	8.28	215.383
14	*xCuprocyparis leylandii*	Leyland Cypress	2.25	4.33	58.901
15	*Melaleuca armillaris*	Giant Honey Myrtle	2.1	3.73	43.709
16	*xCuprocyparis leylandii*	Leyland Cypress	2.25	4.33	58.901
17	*xCuprocyparis leylandii*	Leyland Cypress	2.25	4.33	58.901
18	*xCuprocyparis leylandii*	Leyland Cypress	2.25	4.33	58.901
19	*xCuprocyparis leylandii*	Leyland Cypress	2.25	4.33	58.901
20	*xCuprocyparis leylandii*	Leyland Cypress	2.25	4.33	58.901
21	*Acacia mearnsii*	Black Wattle	2.92	7.92	197.061
22	*xCuprocyparis leylandii*	Leyland Cypress	2.25	4.33	58.901
23	*Pinus radiata*	Monterey Pine	3.17	9	254.469
24	*Hakea salicifolia*	Willow Hakea	1.53	2	12.566
25	*xCuprocyparis leylandii*	Leyland Cypress	2.85	7.8	191.134
26	*Hakea salicifolia*	Willow Hakea	1.53	2	12.566
27	*Eucalyptus globoidea*	White Stringybark	3.77	14.04	619.276
28	*xCuprocyparis leylandii*	Leyland Cypress	2.85	7.8	191.134
29	*Hakea salicifolia*	Willow Hakea	1.53	2	12.566
30	*xCuprocyparis leylandii*	Leyland Cypress	2.13	3.6	40.715
31	*Hakea salicifolia*	Willow Hakea	1.53	2	12.566
32	*Eucalyptus globoidea*	White Stringybark	2.93	8.4	221.671
33	*xCuprocyparis leylandii*	Leyland Cypress	2.13	3.6	40.715
34	*Eucalyptus globoidea*	White Stringybark	2.76	6.84	146.981
35	*Eucalyptus globoidea*	White Stringybark	2.57	5.52	95.726
36	*Pyrus communis*	Common Pear	1.88	3.06	29.417
37	*Hakea salicifolia*	Willow Hakea	1.53	2	12.566
38	*xCuprocyparis leylandii*	Leyland Cypress	2.13	3.6	40.715
39	*Eucalyptus globoidea*	White Stringybark	2.85	7.08	157.477
40	*Hakea salicifolia*	Willow Hakea	1.53	2	12.566
41	*Eucalyptus globoidea*	White Stringybark	2.15	4.2	55.418
42	*xCuprocyparis leylandii*	Leyland Cypress	2.85	7.8	191.134
43	*Eucalyptus globoidea*	White Stringybark	2.57	5.64	99.933
44	*Eucalyptus globoidea*	White Stringybark	1.68	2.04	13.074
45	*Hakea salicifolia*	Willow Hakea	1.53	2	12.566
46	*Eucalyptus globoidea*	White Stringybark	2.1	3.36	35.467
47	*Eucalyptus globoidea*	White Stringybark	3.2	11.04	382.902
48	*Eucalyptus globoidea*	White Stringybark	2.3	4.9	75.43
49	*xCuprocyparis leylandii*	Leyland Cypress	2.13	3.6	40.715
50	*xCuprocyparis leylandii*	Leyland Cypress	2.13	3.6	40.715
51	*Hakea salicifolia*	Willow Hakea	1.53	2	12.566
52	*xCuprocyparis leylandii*	Leyland Cypress	2.13	3.6	40.715
53	*xCuprocyparis leylandii*	Leyland Cypress	2.85	7.8	191.134
54	*xCuprocyparis leylandii*	Leyland Cypress	2.85	7.8	191.134
55	*Grevillea robusta*	Silky Oak	1.61	2	12.566
56	*xCuprocyparis leylandii*	Leyland Cypress	2.13	3.6	40.715
57	*Hakea salicifolia*	Willow Hakea	1.53	2	12.566
58	*Eucalyptus globoidea*	White Stringybark	2.25	3.96	49.265
59	*Pittosporum undulatum*	Sweet Pittosporum	1.5	2	12.566
60	*Eucalyptus globoidea*	White Stringybark	3.32	11.16	391.272
61	*xCuprocyparis leylandii*	Leyland Cypress	2.85	7.8	191.134

Tree ID	*Genus Species*	Common Name	SRZ radius (m) AS4970	NRZ radius (m) AS4970	NRZ Area AS 4970 (m2)
62	*Eucalyptus globoidea*	White Stringybark	1.82	2.4	18.096
63	*Hakea salicifolia*	Willow Hakea	1.53	2	12.566
64	*xCuprocyparis leylandii*	Leyland Cypress	1.94	3.12	30.582
65	*Eucalyptus globoidea*	White Stringybark	3.09	9.48	282.336
66	*Eucalyptus globoidea*	White Stringybark	1.68	2	12.566
67	*Eucalyptus globoidea*	White Stringybark	1.5	2	12.566
68	*Eucalyptus globoidea*	White Stringybark	2.55	5.52	95.726
69	*xCuprocyparis leylandii*	Leyland Cypress	2.13	3.6	40.715
70	*xCuprocyparis leylandii*	Leyland Cypress	1.94	3.12	30.582
71	*Hakea salicifolia*	Willow Hakea	1.53	2	12.566
72	*xCuprocyparis leylandii*	Leyland Cypress	1.94	3.12	30.582
73	*xCuprocyparis leylandii*	Leyland Cypress	2.13	3.6	40.715
74	*Hakea salicifolia*	Willow Hakea	1.53	2	12.566
75	*xCuprocyparis leylandii*	Leyland Cypress	1.94	3.12	30.582
76	*Acer negundo*	Box Elder	2.08	4.01	50.517
77	*xCuprocyparis leylandii*	Leyland Cypress	1.94	3.12	30.582
78	*Pittosporum undulatum*	Sweet Pittosporum	1.57	2	12.566
79	*xCuprocyparis leylandii*	Leyland Cypress	1.94	3.12	30.582
80	*Pittosporum undulatum*	Sweet Pittosporum	1.5	2	12.566
81	*Hakea salicifolia*	Willow Hakea	1.5	2	12.566
82	*xCuprocyparis leylandii*	Leyland Cypress	1.94	3.12	30.582
83	*Hakea salicifolia*	Willow Hakea	1.5	2	12.566
84	*Pittosporum undulatum*	Sweet Pittosporum	1.57	2	12.566
85	*xCuprocyparis leylandii*	Leyland Cypress	1.94	3.12	30.582
85	*xCuprocyparis leylandii*	Leyland Cypress	1.94	3.12	30.582
87	*xCuprocyparis leylandii*	Leyland Cypress	1.94	3.12	30.582
88	*xCuprocyparis leylandii*	Leyland Cypress	1.94	3.12	30.582
89	*xCuprocyparis leylandii*	Leyland Cypress	2.13	3.6	40.715
90	*xCuprocyparis leylandii*	Leyland Cypress	1.94	3.12	30.582
91	*xCuprocyparis leylandii*	Leyland Cypress	2.15	3.84	46.325
92	*xCuprocyparis leylandii*	Leyland Cypress	2.85	7.8	191.134
93	*xCuprocyparis leylandii*	Leyland Cypress	1.94	3.12	30.582
94	*xCuprocyparis leylandii*	Leyland Cypress	2.85	7.8	191.134
95	*xCuprocyparis leylandii*	Leyland Cypress	2.3	4.44	61.932
96	*xCuprocyparis leylandii*	Leyland Cypress	1.94	3.12	30.582
97	*xCuprocyparis leylandii*	Leyland Cypress	2.25	4.32	58.63
98	*xCuprocyparis leylandii*	Leyland Cypress	1.94	3.12	30.582
99	*Eucalyptus obliqua*	Messmate Stringybark	2.85	6.6	136.848
100	*xCuprocyparis leylandii*	Leyland Cypress	2.13	3.6	40.715
101	*xCuprocyparis leylandii*	Leyland Cypress	1.94	3.12	30.582
102	*Pittosporum undulatum*	Sweet Pittosporum	1.5	2	12.566
103	*xCuprocyparis leylandii*	Leyland Cypress	1.94	3.12	30.582
104	*Eucalyptus globulus*	Blue Gum	2.87	7.32	168.334
105	*xCuprocyparis leylandii*	Leyland Cypress	2.13	3.6	40.715
106	*Pittosporum undulatum*	Sweet Pittosporum	1.5	2	12.566
107	*Pittosporum undulatum*	Sweet Pittosporum	1.5	2	12.566
108	*xCuprocyparis leylandii*	Leyland Cypress	1.94	3.12	30.582
109	*Hakea laurina*	Pincushion Hakea	1.5	2	12.566
110	*xCuprocyparis leylandii*	Leyland Cypress	2.13	3.6	40.715
111	*Pittosporum undulatum*	Sweet Pittosporum	1.57	2	12.566
112	*xCuprocyparis leylandii*	Leyland Cypress	1.94	3.12	30.582
113	*Hakea laurina*	Pincushion Hakea	1.5	2	12.566
114	*xCuprocyparis leylandii*	Leyland Cypress	2.13	3.6	40.715
115	*Hakea laurina*	Pincushion Hakea	1.5	2	12.566
116	*xCuprocyparis leylandii*	Leyland Cypress	1.94	3.12	30.582
117	*Pyrus calleryana*	Callery Pear	2.34	4.92	76.047
118	*Pyrus calleryana*	Callery Pear	2.15	3.96	49.265
119	*Pyrus calleryana*	Callery Pear	2	3.48	38.046
120	*xCuprocyparis leylandii*	Leyland Cypress	2.13	3.6	40.715
121	*Hakea laurina*	Pincushion Hakea	1.5	2	12.566
122	*xCuprocyparis leylandii*	Leyland Cypress	1.94	3.12	30.582
123	*Hakea laurina*	Pincushion Hakea	1.5	2	12.566
124	*Eucalyptus grandis*	Flooded Gum	2.55	5.66	100.643
125	*xCuprocyparis leylandii*	Leyland Cypress	2.85	7.8	191.134
126	*Eucalyptus botryoides*	Southern Mahogany	3.31	11.04	382.902
127	*xCuprocyparis leylandii*	Leyland Cypress	1.94	3.12	30.582
128	*Grevillea robusta*	Silky Oak	2.93	7.2	162.86

Tree ID	*Genus Species*	Common Name	SRZ radius (m) AS4970	NRZ radius (m) AS4970	NRZ Area AS 4970 (m2)
129	*xCuprocyparis leylandii*	Leyland Cypress	1.94	3.12	30.582
130	*Pittosporum undulatum*	Sweet Pittosporum	1.82	2.64	21.896
131	*Ulmus sp.*	Elm	2.63	6.28	123.899
132	*Eucalyptus globulus*	Blue Gum	3.95	15	706.858
133	*xCuprocyparis leylandii*	Leyland Cypress	1.94	3.12	30.582
134	*xCuprocyparis leylandii*	Leyland Cypress	2.13	3.6	40.715
135	*xCuprocyparis leylandii*	Leyland Cypress	1.94	3.12	30.582
136	*xCuprocyparis leylandii*	Leyland Cypress	1.94	3.12	30.582
137	*xCuprocyparis leylandii*	Leyland Cypress	1.94	3.12	30.582
138	*Unknown sp.*	Unknown	2.25	2.25	15.904
139	*Grevillea robusta*	Silky Oak	2.57	5.64	99.933
140	*xCuprocyparis leylandii*	Leyland Cypress	2.13	4.02	50.769
141	*xCuprocyparis leylandii*	Leyland Cypress	2.13	4.02	50.769
142	*xCuprocyparis leylandii*	Leyland Cypress	2.13	4.02	50.769
143	*xCuprocyparis leylandii*	Leyland Cypress	2.13	4.02	50.769
144	*xCuprocyparis leylandii*	Leyland Cypress	2.13	4.02	50.769
145	*Pittosporum undulatum*	Sweet Pittosporum	1.53	2	12.566
146	*xCuprocyparis leylandii*	Leyland Cypress	2.13	4.02	50.769
147	*xCuprocyparis leylandii*	Leyland Cypress	2.13	4.02	50.769
148	*xCuprocyparis leylandii*	Leyland Cypress	2.13	4.02	50.769
149	*xCuprocyparis leylandii*	Leyland Cypress	2.13	4.02	50.769
150	*xCuprocyparis leylandii*	Leyland Cypress	2.13	4.02	50.769
151	*xCuprocyparis leylandii*	Leyland Cypress	2.13	4.02	50.769
152	*xCuprocyparis leylandii*	Leyland Cypress	2.13	4.02	50.769
153	*xCuprocyparis leylandii*	Leyland Cypress	2.13	4.02	50.769
154	*xCuprocyparis leylandii*	Leyland Cypress	2.13	4.02	50.769
155	*Fraxinus angustifolia "Raywood"*	Claret Ash	2.25	3	28.274
156	*Pittosporum undulatum*	Sweet Pittosporum	1.75	2.4	18.096
157	*Pittosporum undulatum*	Sweet Pittosporum	1.5	2	12.566
158	*Eucalyptus grandis*	Flooded Gum	2.97	8.28	215.383
159	*Pittosporum undulatum*	Sweet Pittosporum	1.88	2.89	26.239
160	*Melaleuca ericifolia*	Swamp Paperbark	1.5	2	12.566
161	*Betula sp.*	Birch	1.53	2	12.566
162	*Malus xdomestica*	Apple	1.5	2	12.566
163	*Pittosporum tenuifolium*	Kohuhu	1.88	3.19	31.969
164	*Eucalyptus fulgens*	Dandenong Scent-bark	2.13	3.6	40.715
165	*xCuprocyparis leylandii*	Leyland Cypress	1.65	2.04	13.074
166	*Pittosporum undulatum*	Sweet Pittosporum	1.57	2	12.566
167	*xCuprocyparis leylandii*	Leyland Cypress	1.65	2.04	13.074
168	*xCuprocyparis leylandii*	Leyland Cypress	1.65	2.04	13.074
169	*xCuprocyparis leylandii*	Leyland Cypress	1.65	2.04	13.074
170	*xCuprocyparis leylandii*	Leyland Cypress	1.65	2.04	13.074
171	*Eucalyptus bicostata*	Eurabbie	3.75	14.28	640.629
172	*Callistemon viminalis*	Weeping Bottle Brush	1.61	2	12.566
173	*Camellia japonica*	Camellia	1.5	2	12.566
174	*Pittosporum undulatum*	Sweet Pittosporum	1.61	2	12.566
175	*Melaleuca ericifolia*	Swamp Paperbark	1.82	2.64	21.896
176	*Olea europaea*	European Olive	1.88	3.03	28.843
177	*Eucalyptus globulus*	Blue Gum	2.61	6.26	123.111
178	*Melaleuca ericifolia*	Swamp Paperbark	1.5	2	12.566
179	*Eucalyptus globulus*	Blue Gum	3.92	15	706.858
180	*Eucalyptus sp.*	Gum	2.57	2.57	20.75
181	*Pyrus calleryana*	Callery Pear	2.2	4.08	52.296
182	*Pyrus calleryana*	Callery Pear	2.13	3.84	46.325
183	*Pittosporum undulatum*	Sweet Pittosporum	1.5	2	12.566
184	*Aesculus hippocastanum*	Horse Chestnut	2.15	4.3	58.088
185	*Eucalyptus obliqua*	Messmate Stringybark	2.93	8.05	203.583
186	*Laurus nobilis*	Bay Tree	1.5	2	12.566
187	*Pyrus calleryana*	Callery Pear	2.18	4.2	55.418
188	*Betula sp.*	Birch	2.1	3.48	38.046
189	*Olea europaea*	European Olive	2.08	3.12	30.582
190	*Melaleuca ericifolia*	Swamp Paperbark	1.91	3.26	33.388
191	*Acer saccharinum*	Silver Maple	1.53	2	12.566
192	*Pyrus calleryana*	Callery Pear	2.3	4.32	58.63
193	*Melaleuca ericifolia*	Swamp Paperbark	2	3.31	34.42
194	*Liriodendron tulipifera*	Tulip Tree	2.2	3.84	46.325

Tree ID	*Genus Species*	Common Name	SRZ radius (m) AS4970	NRZ radius (m) AS4970	NRZ Area AS 4970 (m2)
195	*Melaleuca ericifolia*	Swamp Paperbark	1.88	2.76	23.931
196	*Aesculus hippocastanum*	Horse Chestnut	1.53	2	12.566
197	*Eucalyptus ovata*	Swamp Gum	3.63	13.92	608.735
198	*Eucalyptus camaldulensis*	River Red Gum	3.51	10.8	366.435
199	*Pyrus calleryana*	Callery Pear	2.15	3.84	46.325
200	*Pyrus calleryana*	Callery Pear	2.43	5.28	87.583
201	*Pinus pinaster*	Maritime Pine	2.51	5.4	91.609
202	*Platanus xacerifolia*	London Plane	2.13	3.72	43.475
203	*Pyrus calleryana*	Callery Pear	2.23	4.2	55.418
204	*Eucalyptus bicostata*	Eurabbie	3.24	9.6	289.529
205	*Syzygium paniculatum*	Magenta Cherry	2.37	5.06	80.436
206	*Eucalyptus ovata*	Swamp Gum	2.18	3.96	49.265
207	*Pittosporum undulatum*	Sweet Pittosporum	1.5	2	12.566
208	*Pittosporum undulatum*	Sweet Pittosporum	1.5	2	12.566
209	*Melaleuca ericifolia*	Swamp Paperbark	1.5	2	12.566
210	*Pyrus calleryana*	Callery Pear	2.51	5.52	95.726
211	*Pittosporum undulatum*	Sweet Pittosporum	1.5	2	12.566
212	*Eucalyptus globoidea*	White Stringybark	3.14	9.24	268.222
213	*Pittosporum undulatum*	Sweet Pittosporum	1.5	2	12.566
214	*Pittosporum undulatum*	Sweet Pittosporum	1.5	2	12.566
215	*Pittosporum undulatum*	Sweet Pittosporum	1.5	2	12.566
216	*Pittosporum undulatum*	Sweet Pittosporum	1.5	2	12.566
217	*Pittosporum undulatum*	Sweet Pittosporum	1.5	2	12.566
218	*Melaleuca ericifolia*	Swamp Paperbark	1.57	2	12.566
219	*Eucalyptus sp.*	Gum	2.67	2.67	22.396
220	*Pinus pinaster*	Maritime Pine	2.39	4.92	76.047
221	*Eucalyptus sp.*	Gum	1.94	1.94	11.824
222	*Pittosporum undulatum*	Sweet Pittosporum	1.5	2	12.566
223	*Pittosporum undulatum*	Sweet Pittosporum	1.5	2	12.566
224	*Quercus rubra*	Red Oak	1.91	2.76	23.931
225	*Pittosporum undulatum*	Sweet Pittosporum	1.5	2	12.566
226	*Pittosporum undulatum*	Sweet Pittosporum	1.5	2	12.566
227	*Pittosporum undulatum*	Sweet Pittosporum	1.5	2	12.566
228	*Melaleuca ericifolia*	Swamp Paperbark	1.5	2	12.566
229	*Eucalyptus bicostata*	Eurabbie	3.36	10.56	350.33
230	*Pittosporum undulatum*	Sweet Pittosporum	1.5	2	12.566
231	*Pittosporum undulatum*	Sweet Pittosporum	1.5	2	12.566
232	*Pittosporum undulatum*	Sweet Pittosporum	1.5	2	12.566
233	*Pittosporum undulatum*	Sweet Pittosporum	1.5	2	12.566
234	*Eucalyptus bicostata*	Eurabbie	3.55	12.48	489.304
235	*Pittosporum undulatum*	Sweet Pittosporum	1.5	2	12.566
236	*Pittosporum undulatum*	Sweet Pittosporum	2.1	3.61	40.942
237	*Pittosporum undulatum*	Sweet Pittosporum	1.5	2	12.566
238	*Pittosporum undulatum*	Sweet Pittosporum	1.5	2	12.566
239	*Pittosporum undulatum*	Sweet Pittosporum	1.5	2	12.566
240	*Hesperocyparis lusitanica*	Mexican Cypress	2.18	3.96	49.265
241	*Pittosporum undulatum*	Sweet Pittosporum	1.5	2	12.566
242	*Pittosporum undulatum*	Sweet Pittosporum	1.5	2	12.566
243	*Corymbia maculata*	Spotted Gum	1.88	2.76	23.931
244	*Eucalyptus globoidea*	White Stringybark	1.75	2.57	20.75
245	*Pittosporum undulatum*	Sweet Pittosporum	1.5	2	12.566
246	*Pittosporum undulatum*	Sweet Pittosporum	1.5	2	12.566
247	*Pittosporum undulatum*	Sweet Pittosporum	1.5	2	12.566
248	*Pittosporum undulatum*	Sweet Pittosporum	1.5	2	12.566
249	*Pittosporum undulatum*	Sweet Pittosporum	1.68	2	12.566
250	*Pittosporum undulatum*	Sweet Pittosporum	1.53	2	12.566
251	*Pittosporum undulatum*	Sweet Pittosporum	1.61	2	12.566
252	*Pittosporum undulatum*	Sweet Pittosporum	1.5	2	12.566
253	*Pittosporum undulatum*	Sweet Pittosporum	1.57	2	12.566
254	*Pittosporum undulatum*	Sweet Pittosporum	1.5	2	12.566
255	*Eucalyptus radiata*	Narrow-leaved Peppermint	2.93	7.56	179.553
256	*Pittosporum undulatum*	Sweet Pittosporum	1.5	2	12.566
257	*Pittosporum undulatum*	Sweet Pittosporum	1.5	2	12.566
258	*Pittosporum undulatum*	Sweet Pittosporum	1.5	2	12.566
259	*Pittosporum undulatum*	Sweet Pittosporum	1.5	2	12.566
260	*Exocarpos cupressiformis*	Cherry Ballart	1.5	2	12.566

Tree ID	*Genus Species*	Common Name	SRZ radius (m) AS4970	NRZ radius (m) AS4970	NRZ Area AS 4970 (m2)
261	*Pittosporum undulatum*	Sweet Pittosporum	1.5	2	12.566
262	*Pittosporum undulatum*	Sweet Pittosporum	1.5	2	12.566
263	*Pittosporum undulatum*	Sweet Pittosporum	1.5	2	12.566
264	*Pittosporum undulatum*	Sweet Pittosporum	1.5	2	12.566
265	*Pittosporum undulatum*	Sweet Pittosporum	1.53	2	12.566
266	*Pittosporum undulatum*	Sweet Pittosporum	1.5	2	12.566
267	*Pittosporum undulatum*	Sweet Pittosporum	1.5	2	12.566
268	*Pittosporum undulatum*	Sweet Pittosporum	1.85	2.52	19.95
269	*Pittosporum undulatum*	Sweet Pittosporum	1.57	2	12.566
270	*Pittosporum undulatum*	Sweet Pittosporum	1.5	2	12.566
271	*Pittosporum undulatum*	Sweet Pittosporum	1.5	2	12.566
272	*Eucalyptus sp.*	Gum	2.32	2.32	16.909
273	*Pittosporum undulatum*	Sweet Pittosporum	1.5	2	12.566
274	*Pittosporum undulatum*	Sweet Pittosporum	1.5	2	12.566
275	*Pittosporum undulatum*	Sweet Pittosporum	1.5	2	12.566
276	*Pittosporum undulatum*	Sweet Pittosporum	1.5	2	12.566
277	*Pittosporum undulatum*	Sweet Pittosporum	1.5	2	12.566
278	*Pittosporum undulatum*	Sweet Pittosporum	1.5	2	12.566
279	*Pittosporum undulatum*	Sweet Pittosporum	1.5	2	12.566
280	*Pittosporum undulatum*	Sweet Pittosporum	1.5	2	12.566
281	*Pittosporum undulatum*	Sweet Pittosporum	1.5	2	12.566
282	*Pittosporum undulatum*	Sweet Pittosporum	1.5	2	12.566
283	*Pittosporum undulatum*	Sweet Pittosporum	1.5	2	12.566
284	*Pittosporum undulatum*	Sweet Pittosporum	1.5	2	12.566
285	*Exocarpos cupressiformis*	Cherry Ballart	1.68	2.21	15.344
286	*Melaleuca ericifolia*	Swamp Paperbark	1.5	2	12.566
287	*Pittosporum undulatum*	Sweet Pittosporum	1.5	2	12.566
288	*Pittosporum undulatum*	Sweet Pittosporum	1.5	2	12.566
289	*Pittosporum undulatum*	Sweet Pittosporum	1.5	2	12.566
290	*Melaleuca ericifolia*	Swamp Paperbark	1.5	2	12.566
291	*Pittosporum undulatum*	Sweet Pittosporum	1.5	2	12.566
292	*Pittosporum undulatum*	Sweet Pittosporum	1.88	2.76	23.931
293	*Pittosporum undulatum*	Sweet Pittosporum	1.5	2	12.566
294	*Pittosporum undulatum*	Sweet Pittosporum	1.5	2	12.566
295	*Pittosporum undulatum*	Sweet Pittosporum	1.5	2	12.566
296	*Pittosporum undulatum*	Sweet Pittosporum	1.5	2	12.566
297	*Pittosporum undulatum*	Sweet Pittosporum	1.5	2	12.566
298	*Pittosporum undulatum*	Sweet Pittosporum	1.5	2	12.566
299	*Melaleuca ericifolia*	Swamp Paperbark	1.5	2	12.566
300	*Pittosporum undulatum*	Sweet Pittosporum	2	3.12	30.582
301	*Pittosporum undulatum*	Sweet Pittosporum	1.5	2	12.566
302	*Pittosporum undulatum*	Sweet Pittosporum	1.5	2	12.566
303	*Pittosporum undulatum*	Sweet Pittosporum	1.5	2	12.566
304	*Pittosporum undulatum*	Sweet Pittosporum	1.5	2	12.566
305	*Pittosporum undulatum*	Sweet Pittosporum	1.5	2	12.566
306	*Pittosporum undulatum*	Sweet Pittosporum	1.5	2	12.566
307	*Pittosporum undulatum*	Sweet Pittosporum	1.5	2	12.566
308	*Pittosporum undulatum*	Sweet Pittosporum	1.5	2	12.566
309	*Pittosporum undulatum*	Sweet Pittosporum	1.5	2	12.566

11 Appendix 4: NRZ, SRZ and Encroachment Map

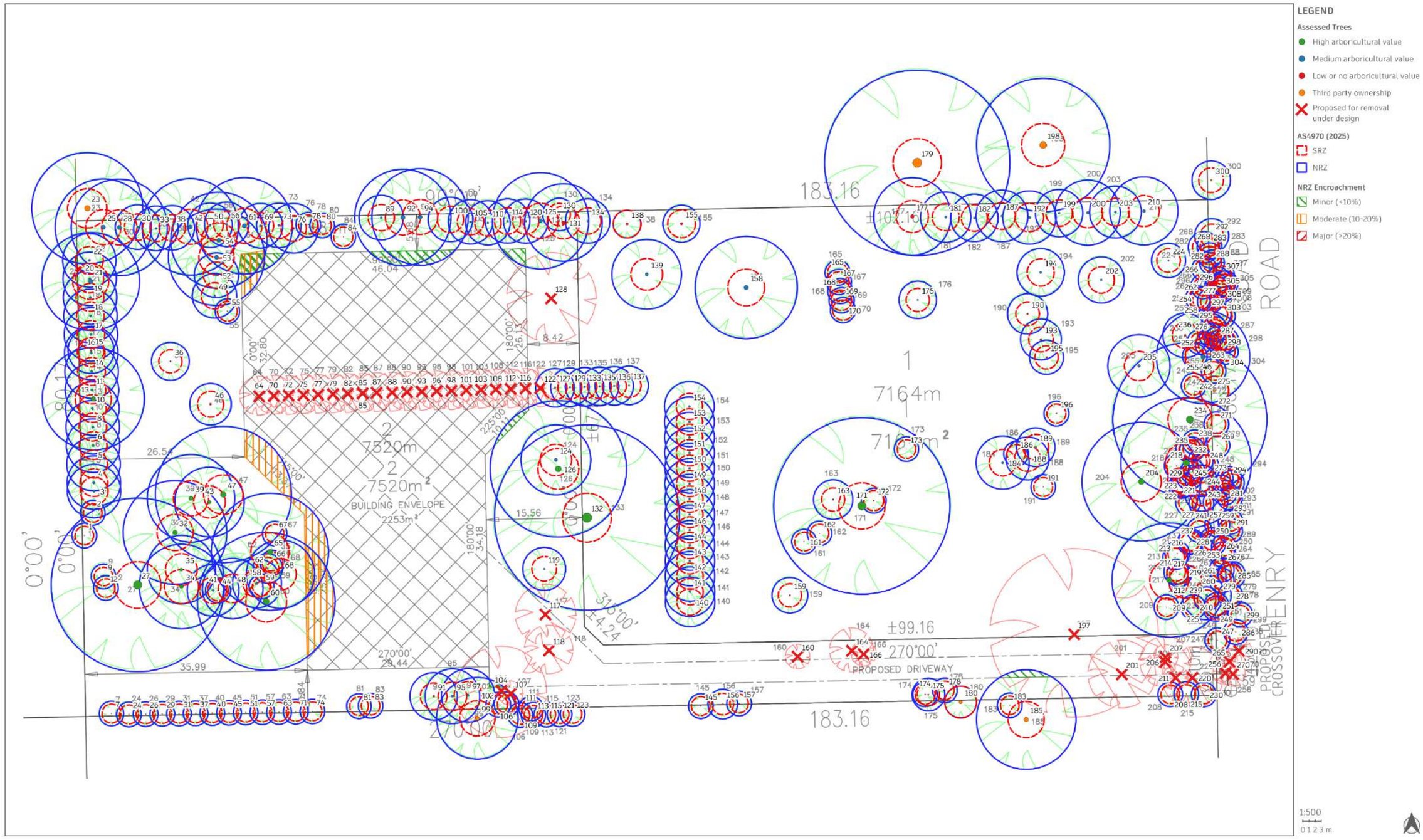

Figure 4: NRZ, SRZ and Encroachment Map

12 Appendix 5: Tree Photos

Tree ID: 1

Tree ID: 2

Tree ID: 3, 4, 5, 6, 8, 10, 11, 14, 16, 17, 18, 19, 20, 22

Tree ID: 7, 24, 26, 29, 31, 37, 40, 45, 51, 57, 63, 71, 74

Tree ID: 9

Tree ID: 12

Tree ID: 13

Tree ID: 15

Tree ID: 21

Tree ID: 23

Tree ID: 25, 28, 42, 53, 54, 61, 92, 94, 125

Tree ID: 27

Tree ID: 30, 33, 38, 49, 50, 52, 56, 69, 73, 89, 91, 100, 105, 110, 114, 120, 134

Tree ID: 32

Tree ID: 34

Tree ID: 35

Tree ID: 36

Tree ID: 39

Tree ID: 41

Tree ID: 43

Tree ID: 44

Tree ID: 46

Tree ID: 47

Tree ID: 48

Tree ID: 55

Tree ID: 58

Tree ID: 59

Tree ID: 60

Tree ID: 62

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Tree ID: 65

Tree ID: 66

Tree ID: 67

Tree ID: 68

Tree ID: 76

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Tree ID: 80

Tree ID: 81, 83

Tree ID: 84

Tree ID: 95

Tree ID: 97

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Tree ID: 102

Tree ID: 104

Tree ID: 106

Tree ID: 107

Tree ID: 109, 113, 115, 121, 123

Tree ID: 111

Tree ID: 117

Tree ID: 118

Tree ID: 119

Tree ID: 124

Tree ID: 126

Tree ID: 128

Tree ID: 130

Tree ID: 131

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Tree ID: 138

Tree ID: 139

Tree ID: 140, 141, 142, 143, 144, 146, 147, 148, 149, 150, 151, 152, 153, 154

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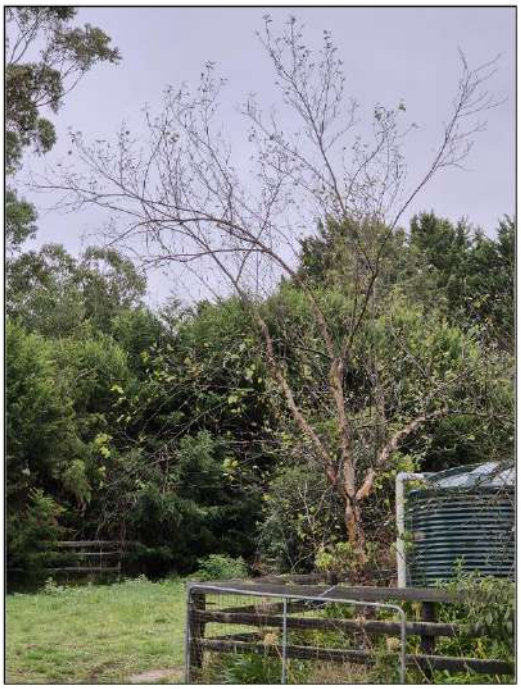
Tree ID: 161



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Tree ID: 164

Tree ID: 165, 167, 168, 169, 170

Tree ID: 166

Tree ID: 171

Tree ID: 172

Tree ID: 173

Tree ID: 174

Tree ID: 175

Tree ID: 176

Tree ID: 177

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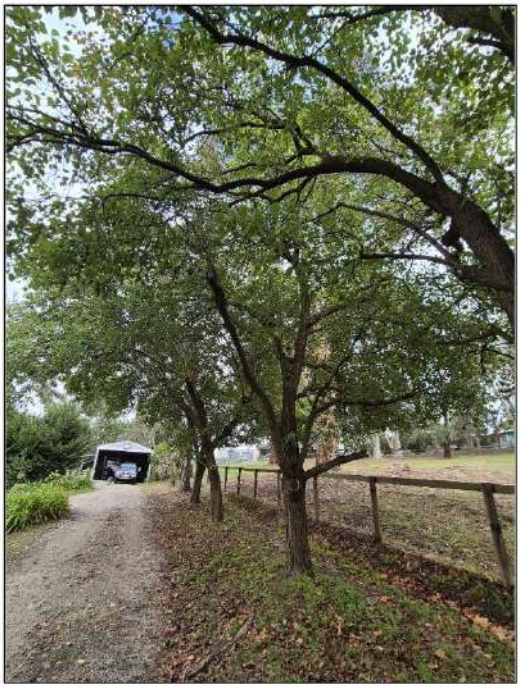
Tree ID: 183

Tree ID: 184

Tree ID: 185

Tree ID: 186

Tree ID: 187



Tree ID: 188

Tree ID: 189

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Tree ID: 198

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233, 235, 237, 238, 239, 241, 242, 245, 246, 248, 252, 254, 258, 262, 263, 266

Tree ID: 208, 215, 230

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Tree ID: 257, 259, 264, 267, 273, 274, 281, 289, 291, 293, 294, 302

Tree ID: 260

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Tree ID: 271

Tree ID: 272

Tree ID: 275, 276, 277, 280, 282, 284, 287, 288, 295, 296, 297, 298, 301, 303, 304, 305, 306, 307, 308, 309

Tree ID: 278

Tree ID: 279

Tree ID: 283

Tree ID: 285

Tree ID: 286

Tree ID: 290

Tree ID: 292

Tree ID: 299

Tree ID: 300

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 10).

Table 10: 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

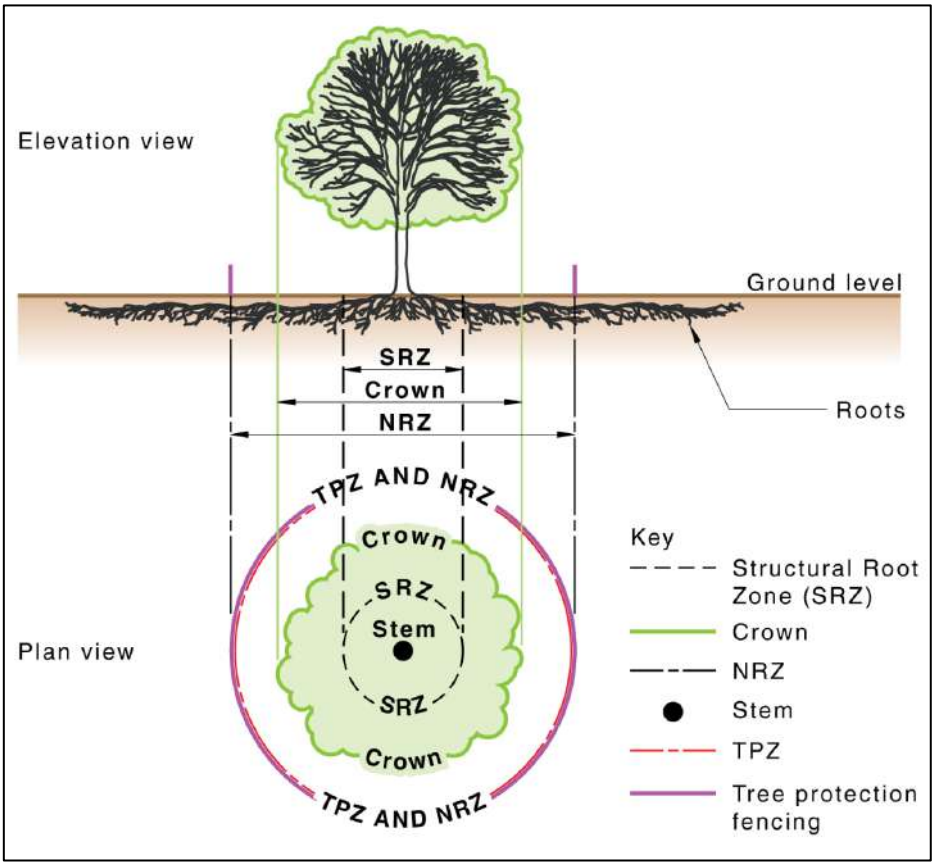


Figure 5: Diagram of NRZ and SRZ (AS 4970 2025)

TREE REMOVAL/RETENTION PLAN

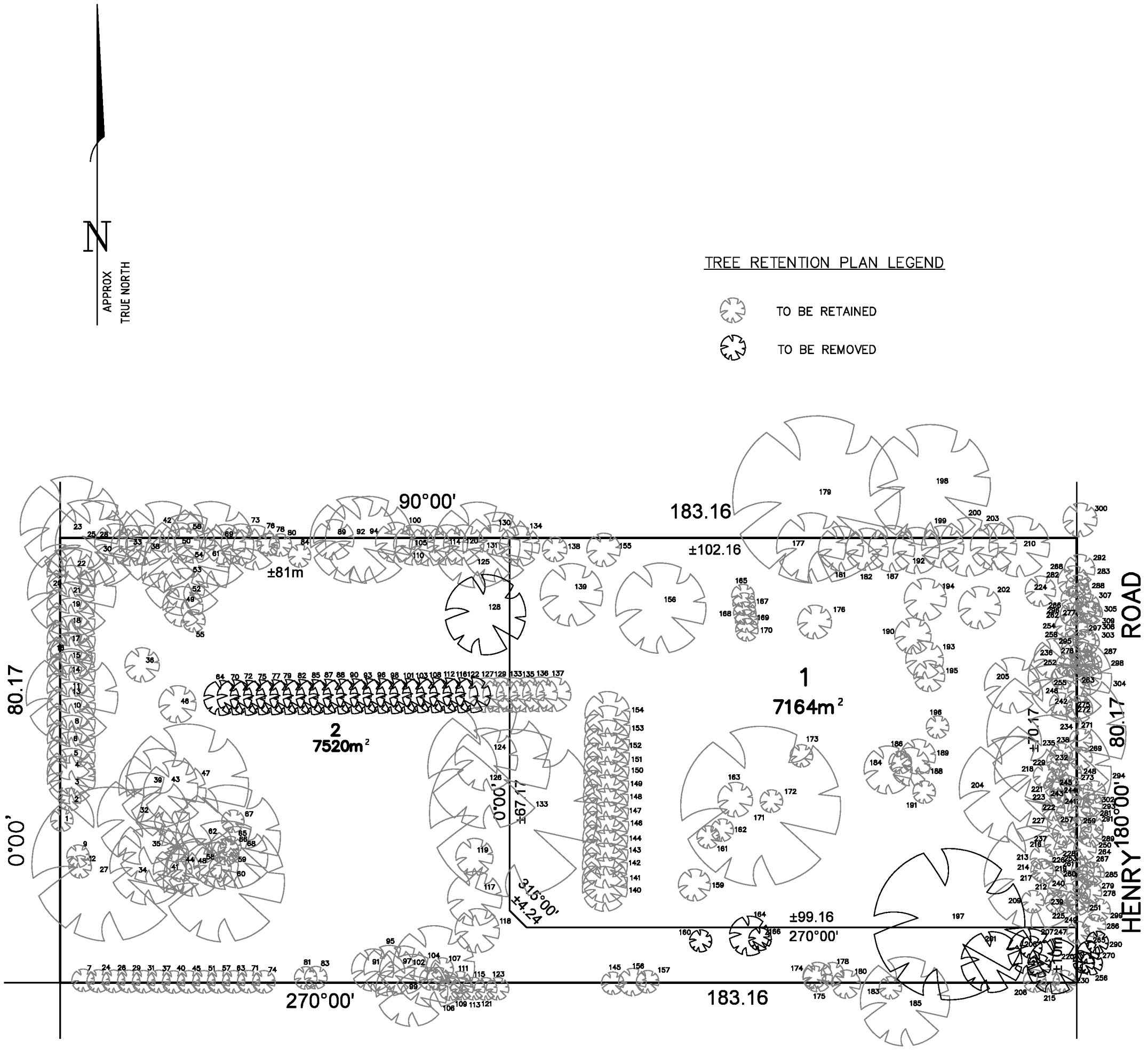
N

APPROX TRUE NORTH

TREE RETENTION PLAN LEGEND

TO BE RETAINED

TO BE REMOVED



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SCALE 1:750	0 7.5 15 30 45 LENGTHS ARE IN METRES	ORIGINAL SHEET SIZE : A3	SHEET 1
[redacted] VERSION 1			

Native Vegetation Removal Report

NVRR ID: 311_20250402_BV5

This report provides information to support an application to remove, destroy or lop native vegetation in accordance with the *Guidelines for the removal, destruction or lopping of native vegetation* (the Guidelines). This report is **not an assessment by DEECA** of the proposed native vegetation removal. Offset requirements have been calculated using modelled condition scores.

Report details

Date created: 02/04/2025

Local Government Area: CARDINIA SHIRE

Registered Aboriginal Party: Bunurong

Coordinates: 145.73450, -38.09637

Address: 16-18 HENRY ROAD BUNYIP 3815

Summary of native vegetation to be removed

Assessment pathway	**Intermediate Assessment Pathway**		
Location category	Location 1 The native vegetation extent map indicates that this area is not typically characterised as supporting native vegetation. It does not meet the criteria to be classified as Location Category 2 or 3. The removal of less than 0.5 hectares of native vegetation in this area will not require a Species Offset.		
Total extent including past and proposed removal (ha) *Includes endangered EVCs (ha): 0*	**0.12**	*Extent of past removal (ha)*	*0*
		Extent of proposed removal - Patches (ha)	*0.000*
		Extent of proposed removal - Scattered Trees (ha)	*0.120*
No. Large Trees proposed to be removed	**1**	*No. Large Patch Trees*	*0*
		No. Large Scattered Trees	*1*
No. Small Scattered Trees	2		

Offset requirements if approval is granted

Any approval granted will include a condition to secure an offset, before the removal of native vegetation, that meets the following requirements:

General Offset amount [1]	**0.03 General Habitat Units**
Minimum strategic biodiversity value score [2]	0.542
Large Trees	1
Vicinity	Melbourne Water CMA or CARDINIA SHIRE LGA

NB: values within tables in this document may not add to the totals shown above due to rounding

The availability of third-party offset credits can be checked using the Native Vegetation Credit Register (NVCR) Search Tool - https://nvcr.delwp.vic.gov.au

1. The General Offset amount required is the sum of all General Habitat Units in Appendix 1.
2. Minimum strategic biodiversity value score is 80 per cent of the weighted average score across habitat zones where a General Offset is required.

Application requirements

Applications to remove, destroy or lop native vegetation must include all the below information. If an appropriate response has not been provided the application is not complete.

Application Requirement 1 - Native vegetation removal information

If the native vegetation removal is mapped correctly, the information presented in this Native Vegetation Removal Report addresses Application Requirement 1.

Application Requirement 2 - Topographical and land information

This statement describes the topographical and land features in the vicinity of the proposed works, including the location and extent of any ridges, hilltops, wetlands and waterways, slopes of more than 20% gradient, low-lying areas, saline discharge areas or areas of erosion.

Application Requirement 3 - Photographs of the native vegetation to be removed

Application Requirement 3 is not addressed in this Native Vegetation Removal Report. All applications must include recent, timestamped photos of each Patch, Large Patch Tree and Scattered Tree which has been mapped in this report.

Application Requirement 4 - Past removal

If past removal has been considered correctly, the information presented in this Native Vegetation Removal Report addresses Application Requirement 4.

Application Requirement 5 - Avoid and minimise statement

This statement describes what has been done to avoid and minimise impacts on native vegetation and associated biodiversity values.

Application Requirement 6 - Property Vegetation Plan

This requirement only applies if an approved Property Vegetation Plan (PVP) applies to the property
Does a PVP apply to the proposal?

No

Application Requirement 7 - Defendable space statement

Where the removal of native vegetation is to create defendable space, this statement:

- Describes the bushfire threat; and
- Describes how other bushfire risk mitigation measures were considered to reduce the amount of native vegetation proposed for removal (this can also be part of the avoid and minimise statement).

This statement is not required if, If the proposed defendable space is within the Bushfire Management Overlay (BMO), and in accordance with the 'Exemption to create defendable space for a dwelling under Clause 44.06 of local planning schemes' in Clause 52.12-5.

Application Requirement 8 - Native Vegetation Precinct Plan

This requirement is only applicable if you are removing native vegetation from within an area covered by Native Vegetation Precinct Plan (NVPP), and the proposed removal is not identified as 'to be removed' within the NVPP.
Does an NVPP apply to the proposal?

No

Application Requirement 9 - Offset statement

This statement demonstrates that an offset is available and describes how the required offset will be secured. The Applicant's Guide provides information relating to this requirement.

Next steps

Applications to remove, destroy or lop native vegetation must address all the application requirements specified in the Guidelines. If you wish to remove the mapped native vegetation you are required to apply for approval from the responsible authority (e.g. local Council). This Native vegetation removal report must be submitted with your application and meets most of the application requirements. The following requirements need to be addressed, as applicable.

Application Requirement 3 - Photographs of the native vegetation to be removed

Recent, dated photographs of the native vegetation to be removed **must be provided** with the application. All photographs must be clear, show whether the vegetation is a Patch of native vegetation, Patch Tree or Scattered Tree, and identify any Large Trees. If the area of native vegetation to be removed is large, provide photos that are indicative of the native vegetation.

Ensure photographs are attached to the application. If appropriate photographs have not been provided the application is not complete.

Application Requirement 6 - Property Vegetation Plan

If a PVP is applicable, it must be provided with the application.

Appendix 1: Description of native vegetation to be removed

General Habitat Units for each zone (Patch, Scattered Tree or Patch Tree) are calculated by the following equation in accordance with the Guidelines

General Habitat Units = extent without overlap x condition score x general landscape factor x 1.5, where the general landscape factor = 0.5 + (strategic biodiversity value score/2)

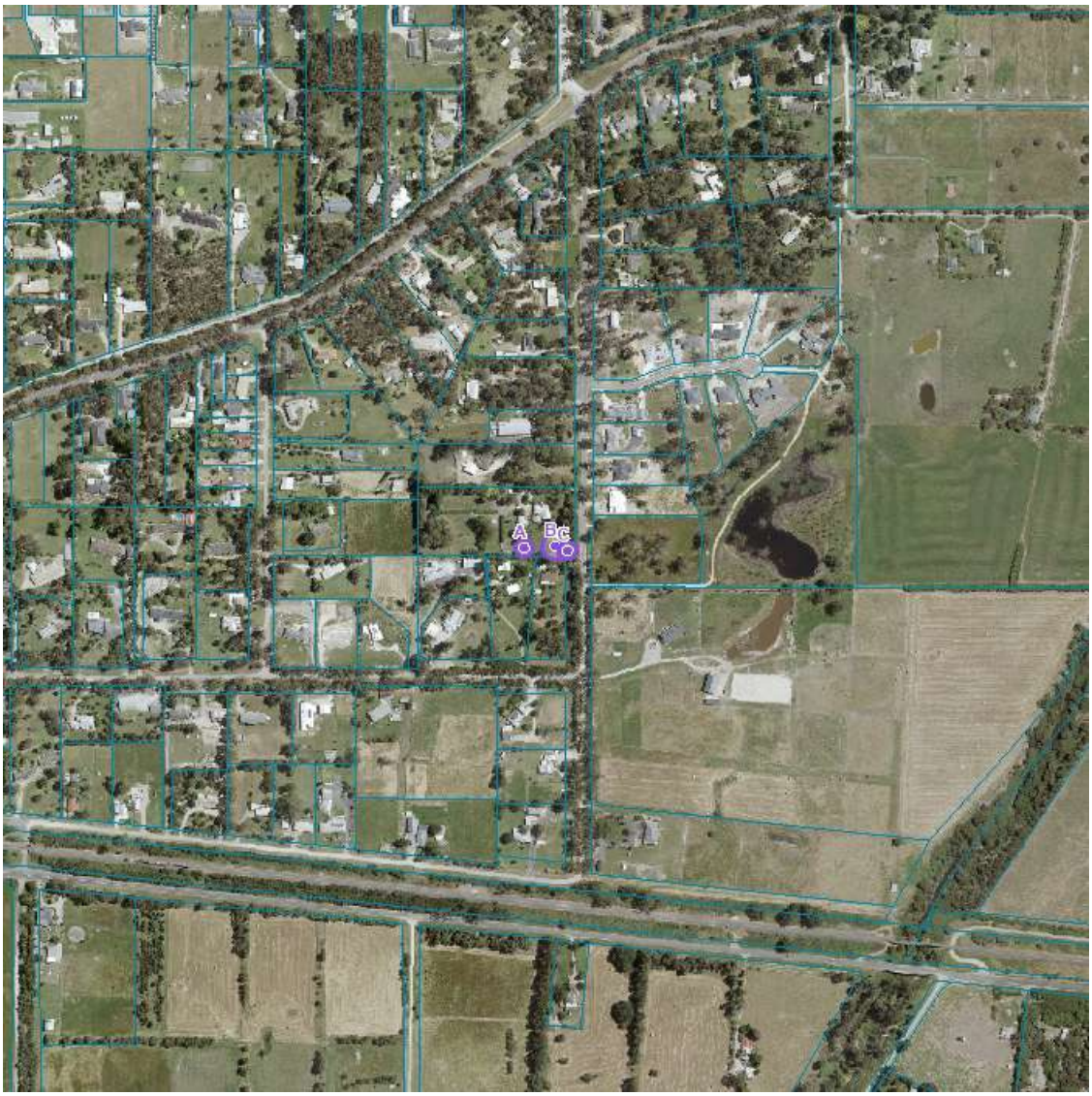
The General Offset amount required is the sum of all General Habitat Units per zone.

Native vegetation to be removed

Information provided by or on behalf of the applicant			Information calculated by NVR Map							
Zone	**Type**	**DBH (cm)**	**EVC code (modelled)**	**Bioregional conservation status**	**Large Tree(s)**	**Condition score (modelled)**	**Polygon extent (ha)**	**Extent without overlap (ha)**	**SBV score**	**General Habitat Units**
A	Scattered Tree	30	HSF_0016	Least Concern	-	0.200	0.031	0.031	0.508	0.007
B	Scattered Tree	116	HSF_0016	Least Concern	1	0.200	0.070	0.070	0.733	0.018
C	Scattered Tree	33	HSF_0016	Least Concern	-	0.200	0.031	0.019	0.748	0.005

Appendix 2: Images of mapped native vegetation

1. Property in context



Proposed Removal

Property Boundaries

N

200 m

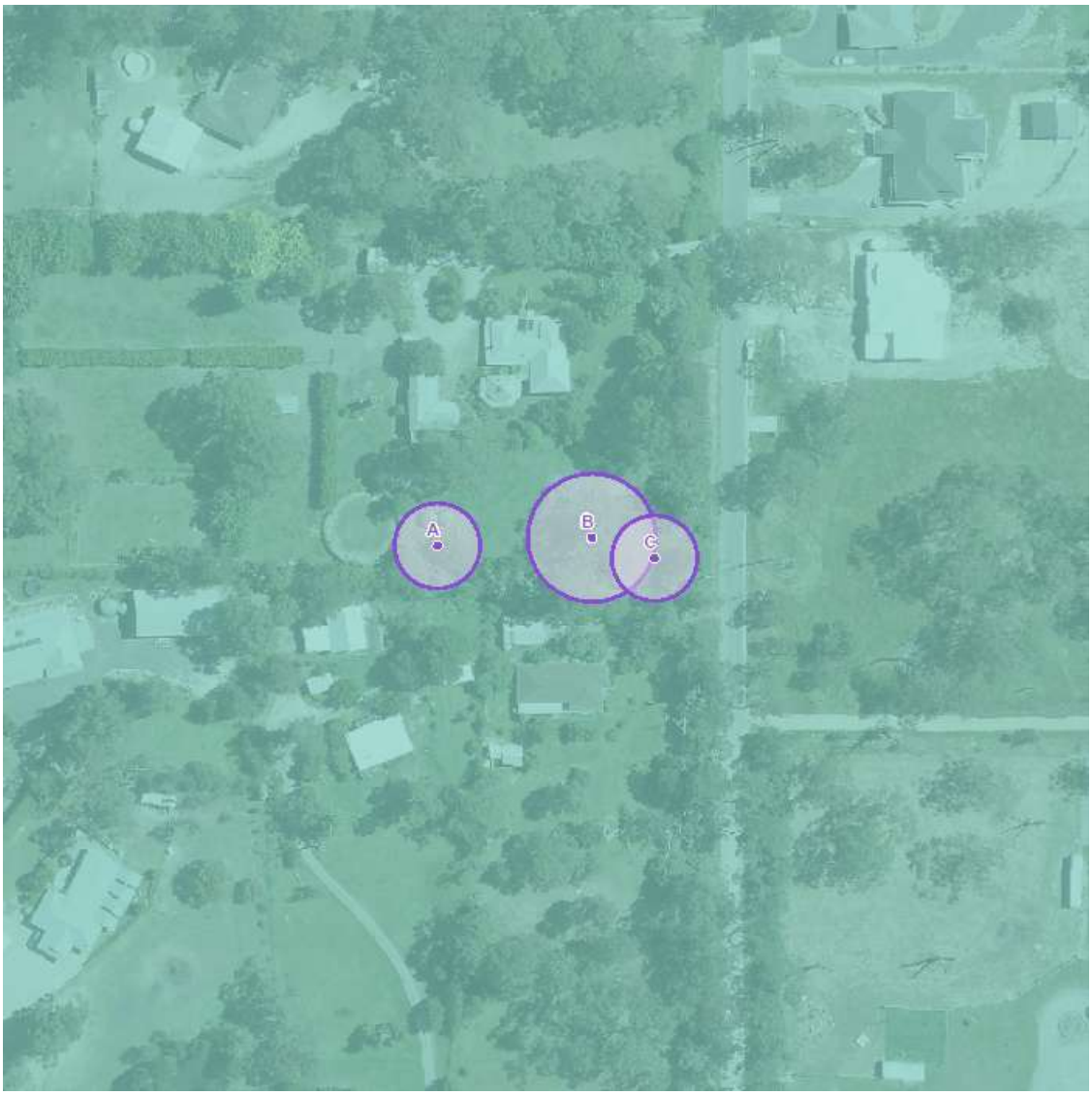
2. Aerial photograph showing mapped native vegetation

Proposed Removal

N

40 m

3. Location Risk Map



Proposed Removal

Location 1

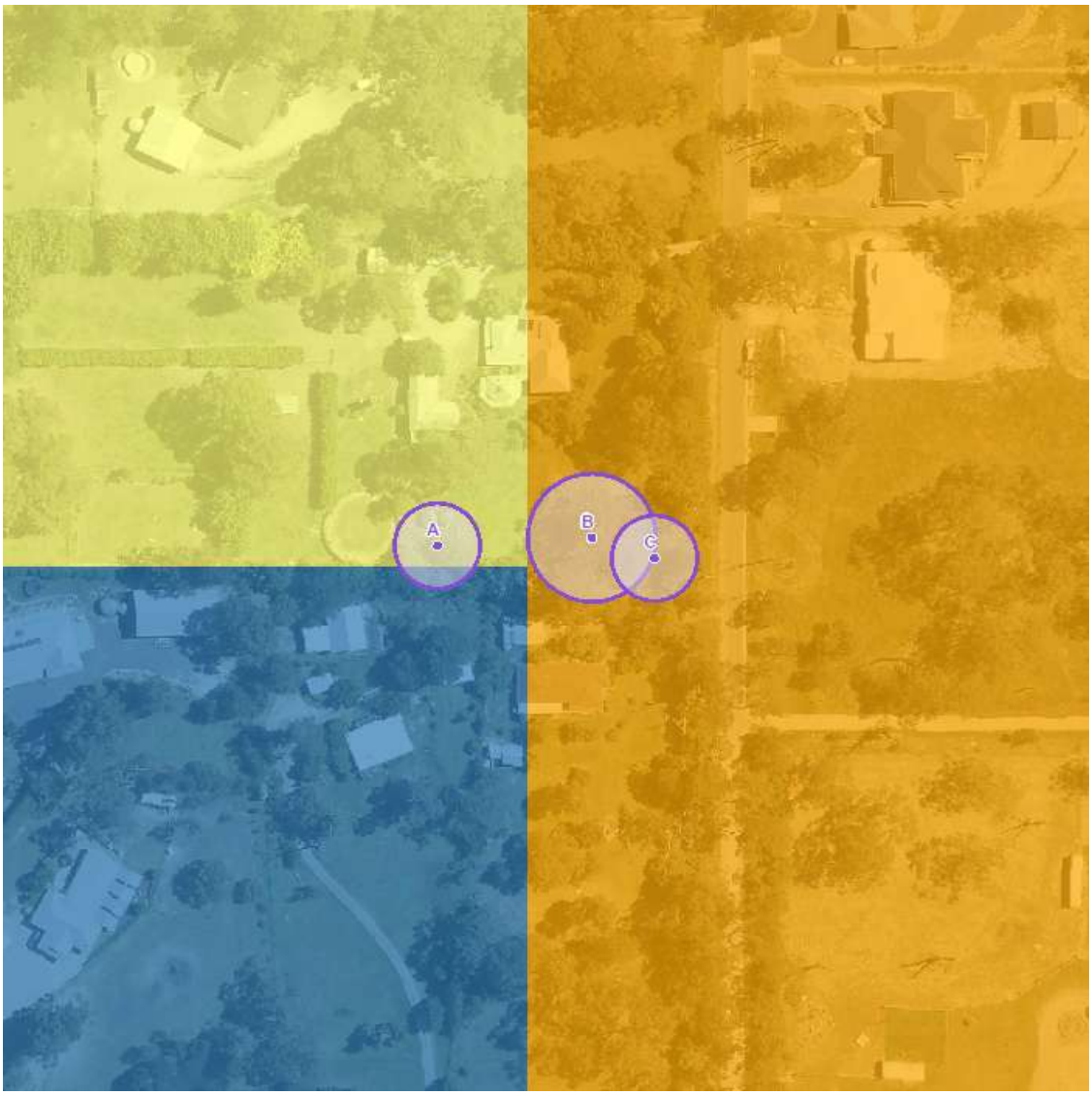
Location 2

Location 3

N

40 m

4. Strategic Biodiversity Value Score Map



5. Condition Score Map

Proposed Removal

0.81 - 1.00
0.61 - 0.80
0.41 - 0.60
0.21 - 0.40
0.00 - 0.20

N

40 m

6. Endangered EVCs

Not Applicable

PLAN OF SUBDIVISION

EDITION

PS 928346N

LOCATION OF LAND

PARISH: BUNYIP

TOWNSHIP: BUNYIP

SECTION: 7

CROWN ALLOTMENT: (PART) 3

CROWN PORTION:

TITLE REFERENCES: VOL 9649 FOL 421

LAST PLAN REFERENCE/S: LOT 1 ON TP 103786V

POSTAL ADDRESS: (At time of subdivision) 16–18 HENRY ROAD BUNYIP 3815

MGA2020 CO-ORDINATES (of approx centre of land in plan) E 388 958 N 5 782 768 ZONE: 55

VESTING OF ROADS AND/OR RESERVES

IDENTIFIER	COUNCIL/BODY/PERSON
NIL	NIL

NOTATIONS

SURVEY:
This plan is/~~is not~~ based on survey.

STAGING:
This ~~is~~/is not a staged subdivision

Planning Permit No. –

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

In Proclaimed Survey Area No. –

NOTATIONS

DEPTH LIMITATION: 15.24 metres applies to all of the land.

WARNING
TOWN PLANNING PLAN ONLY
NOT FOR DETAILED DESIGN
SEE IMPORTANT NOTICES

EASEMENT INFORMATION

LEGEND A–Appurtenant Easement E–Encumbering Easement R–Encumbering Easement (Road)

Section 12(2) of the Subdivision Act 1988 applies to the whole of this plan

Easement Reference	Purpose	Width (Metres)	Origin	Land Benefited/In Favour Of

IMPORTANT NOTICE
This plan must be used only for the purpose for which it was intended.
Any uncertainty in this plan must be clarified with the author.

IMPORTANT NOTICE
This plan has been prepared for town planning purposes only and must not be used for any other purpose.

WARNING
PRELIMINARY PLAN ONLY
THIS IS A PHOTO COPY OF AN UNREGISTERED PLAN.
This plan was prepared to be sealed by the Local Authority and to be registered by the Registrar of Titles. As alterations beyond the control of the surveyor may be required by the Local Authorities or the Registrar of Titles or other persons when the original is finally presented for registration, M. J. Reddie Surveys Pty Ltd can accept no liability for any loss or damage howsoever arising, to any person or corporation who may rely on this plan for any purpose.
The original of this plan remains the property of M. J. Reddie Surveys Pty Ltd and copies of such plan made prior to registration must not be produced without this note which is an integral part of this plan prior to registration.

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REF: 24–10–219 FILE: KMH917

[redacted] / VERSION 3

ORIGINAL SHEET SIZE: A3

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LAND CAPABILITY ASSESSMENT
FOR
ON-SITE WASTEWATER MANAGEMENT
AT
16-18 HENRY ROAD, BUNYIP VIC 3815

REPORT No. LCA05032025 MARCH/2025

By

[redacted]
Land Capability Assessment
CONSULTANTS IN THE AGRICULTURAL SCIENCES

IMPORTANT NOTE

The land capability assessment report consists of this cover sheet, two written sections, three drawings and four appendices.
The report elements are not to be read or interpreted in isolation.

TABLE OF CONTENTS

APPENDIX A1
Soil Permeability and Soil Test Results

APPENDIX A2
Soil Profile Photographs

APPENDIX A3
Logs of Boreholes

APPENDIX B
Water and Nutrient Balance and Rainfall Data

APPENDIX C
Land Capability Assessment Table

APPENDIX D
Management Plan

DRAWING 1
Location of Subject Site

DRAWING 2
Location of Proposed Development
Showing Contours

DRAWING MP1
Cut-off Drain Detail for 20/30 Standard
Effluent Irrigation Fields

ASSESSOR'S ACADEMIC & PROFESSIONAL QUALIFICATIONS

[redacted] is the principal Soil Scientist at Land Capability Assessment.
She has a Masters Degree in Applied Science (General Agriculture) (awarded in 2003).

All fieldwork and analyses are undertaken by, or directly supervised by [redacted]

ASSESSOR'S PROFESSIONAL INDEMNITY INSURANCE

Policy Number:	BZF2004488
Period of Cover:	09/08/2024 – 09/08/2025
Geographical Coverage:	Australia
Retro-active Date:	Unlimited
Limit of Indemnity:	$2,000,000

EXECUTIVE SUMMARY

The proposed development at 16-18 Henry Road, Bunyip VIC is suitable for sustainable on-site effluent disposal.

The site is located in the Low Density Residential Zone and is not in a Special Water Supply Catchment. The site is not sewered. It is proposed to subdivide the existing block into 2 lots and construct a 4-bedroom (equivalent) residence on the new lot (Lot 2), which will be 7520m^2 in size.

Our field testing which included soil profile logging and sampling, a differential level survey, laboratory testing and subsequent reporting including water and nutrient balance modelling has revealed that on-site effluent disposal is rational and sustainable.

The assessment has been made in the context of prioritising public and environmental health with a design compromise between rational wastewater reuse and sustainable wastewater disposal.

Effluent shall be treated to at least the 20/30 standard and distributed by pressure compensated subsurface irrigation utilising the processes of evapotranspiration and deep seepage.

The irrigation area has been determined for the mean wet year and satisfies the requirements of *SEPPs (Waters of Victoria)* in that the effluent irrigation system cannot have any detrimental impact on the beneficial use of surface waters or groundwater.

For the proposed development the available area is not limiting and continuous or long-term increases in effluent volume above 600 litres/day (4-bedroom equivalent residence with onsite roof water tank supply as per EPA Victoria - Guideline for onsite wastewater management (May 2024) Table 4-1) are possible.

With regard to density of development and cumulative risk the assessment has considered risk associated with subsurface flows and surface flows.

In regard to subsurface flows, it is clear that provided the on-site system is adequately designed, constructed, operated and maintained the risk to surface and ground waters is negligible. Once the effluent is placed underground, the extraordinary long travel times via ground water to surface waters ensures adequate nutrient attenuation.

In regard to surface flows, it is clear that provided the on-site system is adequately designed, constructed, operated and maintained, the risk to surface and ground waters is no greater than for a sewered development.

Proposed use requires AWTS or a septic tank with a sand filter (or any other treatment system that is capable of producing secondary standard effluent and has current AS/NZS accreditation) and pressure compensated subsurface irrigation.

The LCA recommends a conservative, scientifically based, well founded wastewater management system with inherent multiple barriers of safety.

Cumulative risk from the development is extremely low. The risk of serious or irreversible damage is extremely low.

All requirements of *SEPP (Waters of Victoria)* have been met.

Land Capability Assessment
[redacted]
CONSULTANTS IN THE AGRICULTURAL SCIENCES

53 Telford Drive, Berwick VIC 3806
Email: info@lcavictoria.com.au

LCA05032025 – MARCH/2025

LAND CAPABILITY ASSESSMENT
FOR
ON-SITE WASTEWATER MANAGEMENT
AT
16-18 HENRY ROAD, BUNYIP VIC 3815

SECTION 1. SITE INVESTIGATION

1.1 INTRODUCTION

On instruction from the landowners, an investigation was undertaken to assess land capability for on-site effluent disposal/reuse for a 4-bedroom (equivalent) residence at 16-18 Henry Road, Bunyip VIC.

The site is in the Low Density Residential Zone and is not located in a Special Water Supply Catchment. The site is not sewered. It is proposed to subdivide the existing block into 2 lots and construct a 4-bedroom (equivalent) residence on the new lot (Lot 2), which will be 7520m^2 in size.

The assessment has been made in the context of prioritising public and environmental health with a design compromise between rational wastewater reuse and sustainable wastewater disposal.

1.2 INVESTIGATION METHOD

The site investigation was carried out in accordance with *SEPPs (Waters of Victoria) and related documents. This report is in accordance with* current *SEPPs (Waters of Victoria), EPA Victoria - Guideline for onsite wastewater management (May 2024)* and *EPA Victoria - Guideline for onsite wastewater effluent dispersal and recycling systems (May 2024).* Guidance has been sought from *AS/NZS 1547:2012*, *Guidelines for Wastewater Irrigation*, E.P.A. Publication 168, April 1991, *Wastewater Subsurface Drip Distribution*, Tennessee Valley Authority, March, 2004, *AS 2223, AS 1726, AS 1289, AS 2870* and *Australian Laboratory Handbook of Soil and Water Chemical Methods*.

Our capability assessment involved the mapping of unique land-soil unit(s) which were defined in terms of significant attributes including; climate, slope, aspect, vegetation, soil profile characteristics (including soil reaction trend, electrical conductivity and colloid stability), depth to rock, proximity to surface waters and escarpments, transient soil moisture characteristics and hydraulic conductivity.

Exploratory auger drilling was undertaken to enable profile characterization and sampling. Onsite dispersion index testing revealed significant dispersion. Hence, insitu permeability testing was not considered rational.

Water balance analysis was based on the mean wet year calculated from the mean monthly rainfall data and mean annual rainfall data for Longwarry and mean evaporation data for Noojee and was undertaken in accordance with *Guidelines for Wastewater Irrigation, E.P.A.* Publication 168, April 1991 (Part), *AS/NZS 1547:2012* and in-house methods.

The rainfall and evaporation data were obtained from the National Climate Centre, Bureau of Meteorology. The data was subsequently analysed and applied to our water balance analysis.

The results of the water balance analysis are given in Appendix B, to this report.

The results of the investigation and *in situ* and laboratory testing are given in Section 1.3, below, and in Appendix A, to this report.

1.3 CAPABILITY ASSESSMENT

We have used the attributes determined by the investigation to define one (1) land-soil unit, as follows:-

1.3.1 Land-Soil Unit A.

This land-soil unit consists of moderately sloping terrain, as shown in Drawing 2 and Figure 1.

The salient land-soil attributes and constraints are summarised in Appendix C.

1.3.1.1 Climate.

The general area receives a mean annual rainfall of 871mm and a mean annual evaporation of 1040mm. Mean evaporation exceeds the mean rainfall in October through March.

Rainfall and evaporation data are presented in Appendix B, to this report.

1.3.1.2 Slope and Aspect.

The natural ground surface over the proposed land application area slopes to the south between 14.3-16%, generally, as shown in Drawing 2 and Figure 1.

The unit is somewhat protected from the prevailing winds and is subject to partial shade from nearby trees.

1.3.1.3 Vegetation and Land Use.

The unit is vegetated with pasture grasses as shown in Figure 1. The land is currently unused.

The land application area has been designed for pasture grass (rye/clover equivalent).

1.3.1.4. Slope Stability.

For the encountered subsurface conditions, slope degree and geometry and for the proposed range of hydraulic loadings, the stability of the ground slopes within the disposal areas are unlikely to be compromised.

1.3.1.5 Subsurface Profile.

The following interpretation of the general subsurface profile assumes conditions similar to those encountered in the boreholes are typical of the investigation area.

Note: If subsurface conditions substantially different from those encountered in the investigation are encountered during soil renovation works, all work should cease, and this office notified immediately.

The unit is underlain by residual materials of Late Devonian Age.

The subsurface profiles consist of:

Borehole 2:

- A topsoil (A_1-horizon) layer of grey-brown, moist, medium-dense loam, with a soil reaction trend of 6.2pH and electrical conductivity (EC_{SE}) of 0.10dS/m, containing a root zone, to a depth of 0.15m, overlying,
- A topsoil (A_2-horizon) layer of light grey-brown, moist, dense silt, with a soil reaction trend of 6.0pH and electrical conductivity (EC_{SE}) of 0.10dS/m, to a depth of 0.50m, overlying,
- A residual soil (B_1-horizon) layer of light grey-brown, moist, medium-dense clayey silt, with a soil reaction trend of 6.0pH, electrical conductivity (EC_{SE}) of 0.10dS/m and a free swell[a] of 0%, to a depth of 0.75m, overlying,

[a] After Holtz (measures swell potential of fraction passing 450 micron sieve)

- A residual soil (B_2 -horizon) layer of light grey-brown-yellow-brown, moist, light clay of low plasticity, with a soil reaction trend of 5.9pH, electrical conductivity (EC_{SE}) of 0.09dS/m and a free swell of 5%, to a depth of 0.90m, overlying,

- A residual soil (BC-horizon) layer of dark yellow-brown, moist, light clay of low plasticity, with a soil reaction trend of 5.6pH, electrical conductivity (EC_{SE}) of 0.09dS/m and free swell of 30%, to a depth of 1.10m.

Soil test results, soil profile photographs and logs of boreholes are summarised in Appendix A. For location of boreholes refer Drawing 2.

1.3.1.6 Soil Permeability.

Where the soils are dispersive insitu permeability testing realises inaccurate, low or nil results.

The hydraulic conductivity can be estimated by using test waters containing calcium chloride or by laboratory assessment of colloid stability and determination of ameliorant quantities (e.g. gypsum/lime requirement) and swell potential.

A conservative estimate of permeability has been deduced as follows (from soil texture, structure and swell potential tests):-

Profile analysis in accordance with AS/NZS 1547:2012 and our laboratory-determined dispersion and swell potential shows the residual clay soils to be dispersive light clays (Type 6 soils) with saturated hydraulic conductivity of less than 0.06m/day.

Similar dispersive soils have responded positively (with sufficiently improved hydraulic capability) following applications of gypsum.

For the limiting moderately structured clay soils and assuming renovation by gypsum application (at the rate of 1kg/m^2), we have adopted an estimated and conservative design saturated hydraulic conductivity of 0.05m/day.

Peak deep seepage is conservatively estimated at 3.3mm/day. Average daily deep seepage is 2mm.

1.3.1.7 Basement Rock Permeability.

From the literature and from examination of rock profiles and rock mass defect character in the vicinity, the hydraulic conductivity of the basement rocks would be in excess of 0.05m/day (adopt 1m/day for buffer design).

1.3.1.8 Colloid Stability.

The results of the Emerson Crumb and Dispersion Index Tests indicate that the soil materials are dispersive. The residual clay soils have Emerson Class of 2 and Dispersion Indexes of 10 to 13.

The salting potential has been assessed by inspection of the ground surface for salt tolerant and/or salt affected vegetation and the electrical conductivity has been determined for the A and B horizons using a 1:5 soil/water extract and converted to EC (saturation extract). Also reaction trend and free swell potential have been determined.

The determined electrical conductivity (EC_{SE}) was 0.09dS/m and 0.10dS/m for all materials. The reaction trend ranged from 5.6pH to 6.2pH, while the free swell potential ranged between 0% and 30%.

We recommend amelioration in the form of gypsum application to create and maintain stable peds under saline irrigation.

1.3.1.9 AS1547:2012 Soil Classification.

In accordance with *AS/NZS1547:2012* the residual clay materials can be classified as Type 6 soils (dispersive light clays).

After allocating proportional vertical and lateral flows and allowing for the potential for perched water mounding, we have adopted a daily peak water balance seepage rate[b] of 3.3mm for 20/30 standard effluent. The theoretical average daily seepage rate is 2mm.

1.3.1.10 Surface Drainage.

Site surface drainage is to the south, as shown in Drawing 2 and drains to the nearest surface waters located at least 450m distant.

1.3.1.11 Groundwater.

No seepage was encountered in any of the boreholes. Subsurface flow direction will generally reflect natural surface flow direction (i.e. a southerly direction).

There are no groundwater bores within a significant distance of the site (the closest bore is approximately in 800m distance).

The Visualising Victoria's Groundwater database indicates that the groundwater is between 10-20 metres of the surface.

Regionally the groundwater is of moderate yield and medium quality (1000-3500mg/litre TDS) with beneficial use including most stock.

1.3.1.12 Nutrient Attenuation.

Clayey soils (as found on this site) can fix large amounts of phosphorous. Phosphate-rich effluent seeping through these soils will lose most of the phosphorous within a few metres.

The limiting nutrient for this site is nitrogen. No phosphorous balance is required.

Nitrogen, contained in organic compounds and ammonia, forms nitrate-N and small amounts of nitrite-N when processed in an aerated treatment plant. Several processes affect nitrogen levels within soil after irrigation. Alternate periods of wetting and drying with the presence of organic matter promote reduction to nitrogen gas (denitrification). Plant roots absorb nitrates at varying rates depending on the plant species (see Appendix B), however nitrate is highly mobile, readily leached, and can enter groundwater via deep seepage and surface waters via overland flow and near-surface lateral flow.

Based on the water and nutrient balance (see Appendix B), and assuming 30mg/litre N in the effluent (general case) and 20mg/litre P, a denitrification rate of 20%, with N uptake of 220 kg/ha/year for an appropriate grass cover equivalent to a rye/clover mix and sequential zoned dosing of the irrigation area, a conservative estimate can be made of the nitrogen content in the deep seepage and lateral flow.

For the general case, and without taking into account further expected denitrification below the root zone and in the groundwater (reported to be in the vicinity of 80%), denitrification in the lateral flow (external to the irrigation areas but within the curtilage of the allotment) and plant uptake in the lateral flow, the irrigation area would need to be 240m^2 for 600 litres/day of effluent for complete attenuation.

The hydraulic component of the water balance has shown that an irrigation area of 300m^2 would be required to limit surface rainwater flows to episodic rain events. but for slopes between 10% and 20% the size of the Land Application Area should be increased by 20% (300m^2 x 1.2 = 360m^2)

For a 4-bedroom (equivalent) residence and to 20/30 secondary effluent standard and to satisfactorily attenuate nitrogen on-site and to accommodate the design hydraulic loading and after adjusting for slope, the irrigation area should be at least 360m^2 with an application rate of 1.7mm/day.

[b] The peak water balance seepage loss rate is based on being <10% of the measured/estimated hydraulic conductivity (of the limiting horizon) plus a lateral flow component, effluent type and the effects of soil characteristics including profile thickness (flow paths and storage), shrink-swell, dispersivity, soil reaction trend and assumes renovation.

1.3.1.13 Sand filter.

A sand filter of 12m^2 would be required for a wastewater flow of 600l/day. For the dosage rate of 50L/m^2/day in the sand filter the clay and fine silt content shall be less than 5%, the effective size shall be between 0.4 and 1.0 and the uniformity coefficient shall be less than 4.

1.4 RISK MANAGEMENT & MITIGATION

SEPP (Waters of Victoria) requires that the proposal be assessed on a risk-weighted basis and that cumulative effects be considered.

A multiple barrier approach is used in assessing this development, with components listed below:

1.4.1 Water Usage.

Current best practice allows for a (continuous) daily effluent flow of 600 litres (a 4-bedroom equivalent residence with WELS scheme fixtures and fittings and with onsite roof water tank supply) as per EPA Victoria - Guideline for onsite wastewater management (May 2024) Table 4-1)

The design flow is unlikely to be continuous and (at least) standard water reduction fixtures are a mandatory requirement under local building codes.

1.4.2 Secondary Treatment.

The LCA recommends AWTS or a septic tank with a sand filter (or any other treatment system that is capable of producing secondary standard effluent and has current AS/NZS accreditation) and pressure compensated subsurface irrigation. These systems generate a much higher quality of effluent than septic systems.

1.4.3 Block Size.

Many under-performing effluent fields are placed on blocks where area is limited. Limited area can lead to inadequately sized or inappropriately placed effluent fields and a lack of options should the daily effluent volumes increase.

In the subject site, size is not a constraining factor for a 4-bedroom (equivalent) residence.

1.4.4 Management Plan.

Historically, inadequate maintenance has played a major part in the failure of onsite effluent disposal systems. There is a management plan within the LCA (see Appendix D). This plan gives guidance on the implementation of mandatory operation, maintenance and inspection procedures.

1.4.5 Sizing of Treatment Systems.

No specific treatment system is recommended, however the treatment system must have current AS/NZS accreditation, which match effluent volumes with plant capacity.

1.4.6 Load Balancing.

Surge flows are possible due to parties, gatherings, etc (if any). Under these conditions the systems may become overwhelmed for a period. This potential problem can be eliminated by installing a plant with a load balancing facility (or equivalent function) which enables short-term storage and sustainable flows to the distribution area over extended time. The load balancing facility also provides temporary storage should the plant fail or if there is a power outage.

1.4.7 Zoned Dosing.

The LCA stipulates that the effluent area is (automatically) irrigated sequentially by zones to promote the creation of transient aerobic and anaerobic soil conditions.

The effluent field is sized conservatively for nitrogen attenuation, using pasture grass (rye/clover eq mix), which has a nitrogen uptake of 220 kg/ha/year. Zoned dosing will increase the efficiency of the field for removing nitrogen from the soil.

Undersized effluent fields are at risk of becoming anaerobic for long periods, with the risk of microbial build-up. This leads to secretion of microbial polysaccharides, which coat soil particles and restrict the ability of the soil to adsorb nutrients and attenuate pathogens. Polysaccharides can also coat the interior of pipes and block drainage holes if drainage is slow due to the field being overloaded with effluent. This can lead to effluent surcharge from the ends of the drainage pipes, forming preferential flow paths through overlying soil and draining overland to nearby surface waters.

The alternating aerobic and anaerobic conditions created by zoned dosing prevent the build-up of microbial polysaccharides, and ensures efficient renovation of effluent.

1.4.8 Pressure Compensated Subsurface Disposal.

Conservatively sized irrigation areas with pressure compensated subsurface disposal and zoned dosing deliver effluent directly into the soil. Under saturated conditions, water flow is downwards in the direction of maximum hydraulic gradient. For a surface flow containing effluent to occur, the effluent would have to rise, *against gravity*, through at least 150mm of soil. Under unsaturated conditions, water flow is multi-directional due to capillary forces and matrix suction. The atmosphere provides a capillary break with capillary forces and matrix suction reducing to zero at the air/soil interface. Gravitational forces outweigh the capillary forces and matrix suction long before the surface is reached. Hence, any surface flow from the effluent area cannot contain any effluent, regardless of the intensity and duration of rain events. Surface flow can only consist of **rainfall** in excess of soil storage capacity and hydraulic conductivity.

Note: For a pressure compensated distribution network to function properly, lines must be placed parallel to contours and/or horizontal for even effluent distribution. This requirement, alone, requires a high level of quality assurance at the design and construction phases.

1.4.9 Oversized Effluent Areas.

Design effluent areas are based on conservative estimates of renovation and complete attenuation of nitrogen. After amelioration the deep seepage rate will be lower than the hydraulic conductivity of the limiting layer (<10%).

1.4.10 Reserve Areas.

Although reserve areas are not required for subsurface irrigation there is sufficient area available for extension of the irrigation area. The reserve area is a spare effluent field, which is left undeveloped, but can be commissioned in the case of increase in daily effluent production due to contingencies through the chain of ownership or should the effluent field fail.

1.4.11 Buffer Distances.

Buffer distances are set out in the *EPA Victoria - Guideline for onsite wastewater management (May 2024) Table 4-10* to allow for attenuation of pathogens and nutrients, should an effluent surcharge occur, either overland or subsurface.

The effluent area is located at least 450m from surface waters.

The time taken for groundwater to reach the nearest surface waters can be estimated by using the Darcy equation (which states that velocity is the product of the hydraulic conductivity and the hydraulic gradient). From the literature, the regional gradient is about 0.004.

Flow times can be estimated for groundwater to flow the 450m (minimum) to the nearest surface waters at this site.

For a conservative basement hydraulic conductivity of 1m/day[c] with a hydraulic gradient of 0.004, the time taken for groundwater to flow a distance of 450m is over 300 years.

[c] This is a conservatively high figure to demonstrate maximum possible flow rates. A conservatively low figure was used for calculation of effluent application rates (see recommendations) to demonstrate irrigation sustainability.

1.4.12 System Failure.

A properly designed and constructed onsite effluent system consisting of the treatment plant and the irrigation area can suffer degrees of failure.

Failure can take the form of mechanical (plant), accidental (toilet blockages, damaged irrigation lines, high BOD influent), operational (power outage, overloading) and maintenance (failure to check filters, failure to participate in maintenance programme).

1.4.12.1 Mechanical Breakdown.

Mechanical plant breakdown typically involves compressor and pump malfunction causing no aeration and high water levels, respectively. Both of these situations are alarmed (both audible and visual). The proposed plants will benefit from a service contract providing 24-hour repair cycles. If the alarms were ignored (or malfunctioned) and the household continued to produce waste until the load balancing tank and plant capacities were exceeded (at least 3 days), a mixture of septic and raw effluent would back up to the interior of the residence and/or surcharge through the plant hatches. It is difficult to imagine how this outcome could be allowed to manifest. In addition, a plant malfunction with the residents absent could not cause an effluent surcharge because no influent would be produced during this period.

1.4.12.2 Accidents.

Toilet blockages and accidentally damaged irrigation lines could allow localised surface surcharge of treated effluent. This is why minimum buffers to surface waters have been maintained. High BOD influent (e.g. dairy or orange juice) can realise a lesser quality than 20/30 standard for some weeks. Provided the high BOD influent is not continuous, the soils will continue to satisfactorily renovate the effluent.

1.4.12.3 Operational Breakdown.

Operational failures including power outages and transient hydraulic overloading are accommodated by the load balancing facility, as described in Section 1.4.6, above.

1.4.12.4 Maintenance Breakdown.

Maintenance breakdowns such as failure to clean line filters can lead to expensive pump repairs and in extreme cases leakage (of 20/30 secondary standard effluent) from the outlet pipe. This leakage would occur in proximity to the dwelling and would be noticed and acted on.

Refusal to participate in the management programme would be acted on by the responsible authority within one maintenance cycle.

AWTSs and pumped systems have mechanical components which can malfunction and will age. The management plan including the maintenance and monitoring programmes are essential to ensure safe onsite effluent disposal.

A prepaid maintenance, monitoring and reporting programme involving a certified and insured entity (i.e. external audit) would ensure safe onsite effluent disposal and reduce the responsible authority's burden of responsibility.

1.4.13 Risk Summary.

With regard to density of development and cumulative risk the assessment has considered risk associated with subsurface flows and surface flows.

In regard to subsurface flows, it is clear that provided the on-site system is adequately designed, constructed, operated and maintained (see items 1.4.1 through 1.4.12.4), the risk to surface and ground waters is negligible. Once the effluent is placed underground, the extraordinary long travel times via ground water to surface waters ensures adequate nutrient attenuation.

In regard to surface flows, it is clear that provided the on-site system is adequately designed, constructed, operated and maintained (see items 1.4.1 through 1.4.12.4), the risk to surface and ground waters is no greater than for a sewered development. Indeed, it could be considered that the risk is less than for a sewered development because there can be no mains failure (because there is no mains).

The LCA recommends a conservative, scientifically based, well founded wastewater management system with inherent multiple barriers of safety.

Cumulative risk from the development is extremely low. The risk of serious or irreversible damage is extremely low.

All requirements of *SEPP (Waters of Victoria)* have been met.

Figure 1:. Land-soil unit A (proposed effluent area) viewed from west to east.

SECTION 2. RECOMMENDATIONS

2.1 APPLICATION

The following recommendations are based on the results of our assessment, and are made in accordance with *SEPPs (Waters of Victoria),* the *EPA Victoria - Guideline for onsite wastewater management (May 2024) EPA Victoria - Guideline for onsite wastewater effluent dispersal and recycling systems (May 2024)*, *AS 1726*, and *AS/NZS 1547:2012*.

They are based on the estimated hydraulic conductivity of the limiting clay materials and are designed to demonstrate the viability of on-site effluent disposal for a 4-bedroom (equivalent) residence and a daily effluent production of up to 600 litres and are considered to be conservative.

2.2 SUBSURFACE IRRIGATION

2.2.1 General.

Based on the results of the water balance analysis and considering the prevailing surficial and subsurface conditions including soil profile thickness and slope and on condition that adequate site drainage is provided (as described in Section 2.4, below), on-site irrigation systems are appropriate for effluent disposal for land-soil unit A.

2.2.2 Effluent.

Effluent will be generated from a 4-bedroom (equivalent) residence and will include black and grey water (all wastes).

2.2.2.1 Effluent Quality.

Effluent shall be treated to a standard that meets or exceeds the water quality requirements of the 20/30 standard for BOD/SS.

Operation and maintenance shall be carried out in accordance with *AS/NZS 1547:2012* and a ”system specific” JAS/ANZ accreditation, as appropriate.

2.2.2.2 Effluent Quantity.

The daily effluent volume of 600 litres has been calculated from *EPA Victoria - Guideline for onsite wastewater management (May 2024) Table 4-1)* and assumes a 4-bedroom (equivalent) residence with onsite roof water tank supply and WELS-rated water-reduction fixtures and fittings – minimum 4 Stars for dual-flush toilets, shower-flow restrictors, aerator taps, flow/pressure control valves and minimum 3 Stars for all appliances.

2.2.2.3 Load Balancing.

Transient hydraulic loads in excess of the expected daily load may occur (e.g. holidays, entertaining, overnight guests etc, if any). In addition, and in the case of power outages and/or mechanical breakdown, the load balancing tank can act as a temporary storage.

We recommend that the effluent treatment system be fitted with a load balancing facility **or equivalent function** to allow transient high hydraulic loads to be retained and distributed to the irrigation area during periods of low load.

2.2.3 Application Rates and Irrigation Areas.

An irrigation area and application rate has been determined from the results of the water and nutrient balance analyses and *AS/NZS 1547:2012, Appendix M*.

2.2.3.1 Hydraulic Loading.

To satisfy the requirement for no surface discharge in the mean wet year and after adjusting for slope, effluent shall be applied at an application rate not exceeding 1.7mm/day.

2.2.3.2 Nutrient Loading.

The requirements of *SEPPs (Waters of Victoria)* would be satisfied with effluent applied at an application rate not exceeding 2.5mm/day.

2.2.3.3 Design Loading.

For a daily effluent flow of 600 litres and to satisfy the requirement for no surface flows in the mean wet year and on-site attenuation of nutrients (and as adjusted for slope) the effluent shall be applied to an area of 360m^2 at a rate not exceeding 1.7mm/day.

2.2.4 General Requirements.

For subsurface irrigation, it is assumed that the design, construction, operation and maintenance are carried out in accordance with *AS/NZS1547:2012* and a "system specific" JAS/NZS accreditation, as appropriate.

The irrigation area is to be a dedicated area. To prevent stock and vehicular movements (if any) over the area, the effluent area shall be "fenced".

2.2.5 Subsurface Distribution System.

A distribution network design similar to that shown in *AS/NZS1547:2012, Figure M1* is appropriate.

2.2.5.1 Ground Preparation and Excavations.

Preparation of the ground is to include the smoothing of the land application surface by the redistribution of topsoil to form a free draining, at least 200mm deep, loamy surface over the land application area. Pipe excavations shall only be undertaken in drier periods when soil moisture contents are relatively low and when heavy rainfall and storms are not normally expected.

2.2.5.2 Pump System and Pipe works.

Uniform delivery pressure of the effluent throughout the distribution system is essential. Percolation or drip rates shall not vary by more than 10% from the design rate over the whole of the system (i.e. pressure compensated).

The distribution pipes shall be placed coincident with slope contours. The dripper system is to provide an effective even distribution of effluent over the whole of the design area. Line spacing shall be no closer than 1000mm.

2.2.6 Sequential Zoned Irrigation.

The efficiency of irrigation effluent disposal systems can be highly variable. We recommend that as part of the daily irrigation process, the effluent area be irrigated sequentially by zones to promote the creation of transient aerobic and anaerobic soil conditions.

The inspection regime described in Section 2.2.7, below, is to be strictly adhered to.

2.2.7 Inspections and Monitoring.

We recommend that the mandatory testing and reporting as described in the *EPA Victoria - Guideline for onsite wastewater management (May 2024) Section 6*, include an annual (post spring) report on the functioning and integrity of the distribution system and on the functioning and integrity of the cut-off drains, outfall areas and soil media.

It is expected that the frequency of inspections and monitoring will intensify as systems age.

2.2.8 Soil Renovation.

Soils are dispersive and require amelioration. To create and maintain water-stable peds (under irrigation with saline effluent), soil renovation in the form of gypsum application is required at the rate of 1kg/m^2. Initially, prior to the installation and operation of the effluent irrigation system gypsum is to be broadcast over the land application area at the rate of 0.5kg/m^2. Following that gypsum shall be broadcast again over the effluent area

at the rate of 0.25 kg/m^2 in every two winter months and 0.25kg/m^2 in every 3 summer months until the determined gypsum application of 1kg/m^2 is reached.

If the determined gypsum application of 1kg/m^2 is not reached by the time of the installation and operation of the effluent irrigation system gypsum shall be broadcast again over the effluent area at the rate of 0.25 kg/m^2 in every winter month and 0.25kg/m^2 in every 1.5 summer months.

After reaching the determined gypsum application of 1kg/m^2 we recommend sampling and testing to assess the effectiveness of the gypsum application. This testing will determine future application rate and frequency of application.

Gypsum requirement assumes the gypsum contains 19% Calcium and 15% Sulphur. Gypsum is to be fine ground “Grade 1” agricultural quality and shall be reapplied every 3 years at the rate of 0.5kg/m^2.

2.3 RESERVE AREA

The expected design life of fifteen years may vary due to construction and maintenance vagaries and possible effluent volume increases through the chain of ownership.

There is sufficient available area for extension of the effluent area.

2.4 SITE DRAINAGE.

Our recommendations for on-site effluent disposal have allowed for incident rainfall only (not surface flow or lateral subsurface flow) and are conditional on the installation of a shallow cut-off drain, which shall be placed upslope of the disposal area.

Care shall be taken to ensure that the intercepted and diverted surface waters are discharged well away and down slope of the disposal field.

Locations of the cut-off drains and a drain detail are shown in Drawings 2 and MP1.

The owner shall also ensure that any upslope site works do not divert and/or concentrate surface water flows onto the disposal area.

2.5 BUFFER DISTANCES

The water balance analysis has shown that potential surface (rain water) flows from the effluent area would be restricted to episodic events.

The estimated hydraulic properties of the upper soil materials and hydraulic gradient have been used to evaluate (via Darcy’s Law) the buffer distances with respect to subsurface flows.

Our risk analysis and evaluation has shown that the default setback distances given in *EPA Victoria - Guideline for onsite wastewater management (May 2024) Table 4-10* are conservative and can be applied without amendment, as shown in Drawing 2.

For a building located downslope of an effluent field, your engineer shall evaluate the integrity of building foundations with respect to the assigned buffer distance (at least 3 metres).

2.6 SUMMARY OF RECOMMENDATIONS

Our capability assessment has shown that at least one rational and sustainable on-site effluent disposal method (20/30 standard subsurface irrigation) is appropriate for the proposed development.

A management plan is presented in Appendix D, to this report.

[redacted]

Land Capability Assessment
Principal Soil Scientist

[redacted]

APPENDIX A1

SOIL PERMEABILITY

Where the soils are dispersive insitu permeability testing realises inaccurate, low or nil results.

The hydraulic conductivity can be estimated by using test waters containing calcium chloride or by laboratory assessment of colloid stability and determination of ameliorant quantities (e.g. gypsum/lime requirement) and swell potential.

A conservative estimate of permeability has been deduced as follows (from soil texture, structure and free swell potential tests):-

Profile analysis in accordance with AS/NZS 1547:2012 and our laboratory-determined dispersion and swell potential shows the residual soils to be dispersive light clays (i.e. Type 6 soils) with saturated hydraulic conductivity of less than 0.06m/day.

Similar dispersive soils have responded positively (with sufficiently improved hydraulic capability) following applications of gypsum.

The limiting moderately structured light clay soils require amelioration in the form of gypsum application at the rate of 1kg/m^2. For soil renovation see Section 4.3.3.

The application of gypsum creates water-stable peds (by replacing Sodium and Magnesium ions with Calcium ions) with a consequent higher hydraulic conductivity controlled by macro pores.

Peak deep seepage is conservatively estimated at 3.3mm/day. Average daily deep seepage rate is 2mm.

SOIL TEST RESULTS

Project: Bunyip			Date of sampling: 22/02/25			Date of Lab test:				BH: 1
horizon (cm)	pH	$EC_{1:5}$	EC_{SE}	disp 10 min	disp 2 hours	disp total	Emers 2 hours	Emers 20 hours	free swell %	texture
0-15				0	0	0	8	8		loam
15-50				0	0	0	8	8		silt
50-75				0	0	0	4,5,6	4,5,6		silt
75-95				0	2	10	2	2		clayey silt
95-110				0	3	11	2	2		light clay

Project: Bunyip			Date of sampling: 22/02/25			Date of Lab test:				BH: 2
horizon (cm)	pH	$EC_{1:5}$	EC_{SE}	disp 10 min	disp 2 hours	disp total	Emers 2 hours	Emers 20 hours	free swell %	texture
0-15	6.2	0.01	0.10	0	0	0	8	8		loam
15-50	6.0	0.01	0.10	0	0	0	4,5,6	4,5,6		silt
50-75	6.0	0.01	0.10	1	3	12	2	2	0	clayey silt
75-90	5.9	0.01	0.09	2	3	13	2	2	5	light clay
90-110	5.6	0.01	0.09	0	3	11	2	2	30	light clay

APPENDIX A2

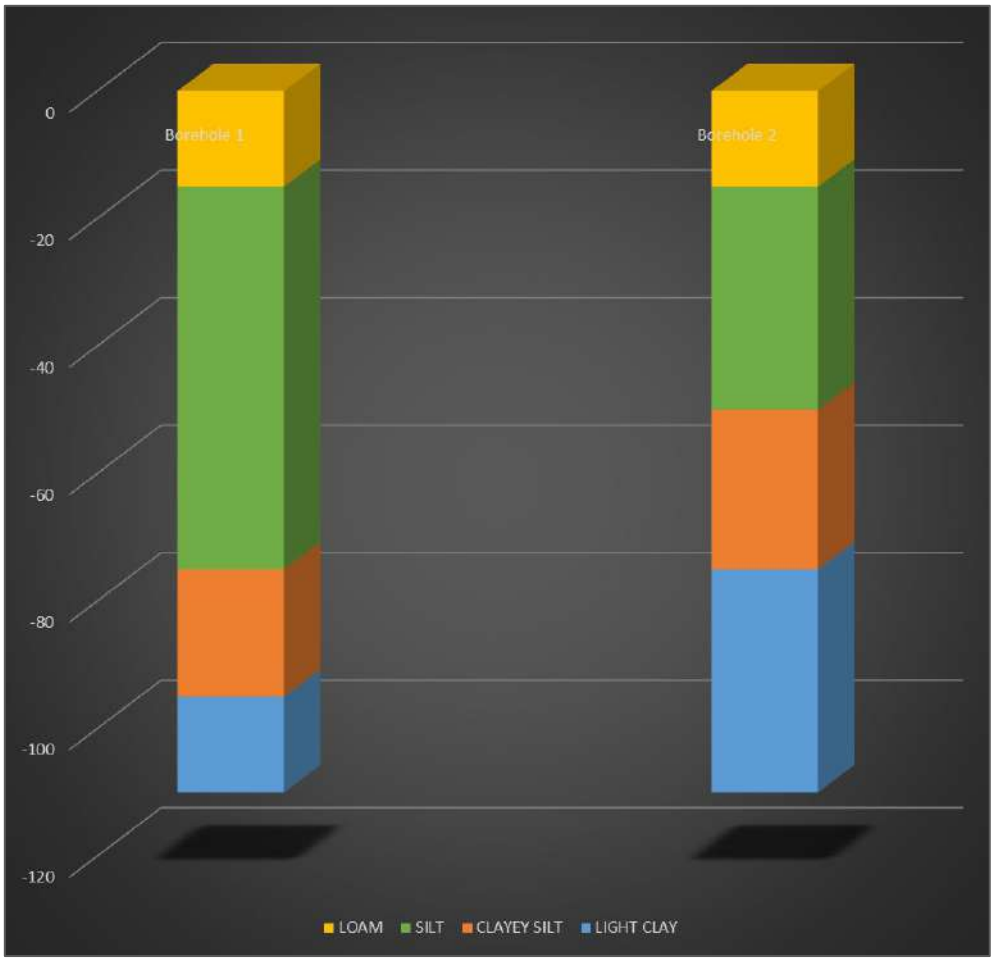
SOIL PROFILE PHOTOGRAPHS

BOREHOLE 1

BOREHOLE 2

APPENDIX A3

LOGS OF BOREHOLES



For location of boreholes refer Drawing 2.

APPENDIX B

WATER AND NUTRIENT BALANCE

Land Capability Assessment (Spreadsheet used with permission)

WATER/NITROGEN BALANCE (20/30 irrigation): With no wet month storage

LCA05032025

Rainfall Station: Longwarry / **Evaporation Station:** Noojee

Location: Bunyip

Date: March, 2025

Client: Jacky and Jamie A'herne

ITEM	UNIT	#	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR
Days in month:		D	31	28	31	30	31	30	31	31	30	31	30	31	365
Evaporation (Mean)	mm	A	152	126	102	63	43	36	40	56	75	99	114	133	1040
Rainfall (mean)	mm	B1	60	50	59	68	75	70	71	83	91	88	84	72	871.2
Effective rainfall	mm	B2	45	38	44	51	56	52	54	62	68	66	63	54	653
Peak seepage Loss[1]	mm	B3	102	92	102	99	102	99	102	102	99	102	99	102	1205
Evapotranspiration(IXA)	mm	C1	68	57	46	28	20	16	18	25	34	45	51	60	468
Waste Loading(C1+B3-B2)	mm	C2	126	111	104	76	65	63	67	65	65	81	87	108	1019
Net evaporation from lagoons (10(0.8A-B1xlagoon area(ha)))	L	NL	0	0	0	0	0	0	0	0	0	0	0	0	0
Volume of Wastew ater	L	E	18600	16800	18600	18000	18600	18000	18600	18600	18000	18600	18000	18600	219000
Total Irrigation Water(E-NL)/G	mm	F	62	56	62	60	62	60	62	62	60	62	60	62	730
Irrigation Area(E/C2)annual.	m^2	G													**300**
Surcharge/Storage	mm	H	-64	-55	-42	-16	-3	-3	-5	-3	-5	-19	-27	-46	**0**
Actual seepage loss	mm	J	38	37	60	83	99	96	97	99	94	83	72	56	515
Direct Crop Coefficient:		I	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	Shade:

Rainfall Retained:	75	%	K	1. Seepage loss (peak) equals deep seepage plus lateral flow : 3.3mm
Lagoon Area:	0	ha	L	CROP FACTOR
Wastew ater(Irrigation):	600	L	M	0.7 0.7 0.7 0.6 0.5 0.45 0.4 0.45 0.55 0.65 0.7 0.7 Pasture:
Seepage Loss (Peak):	3.3	mm	N	0.45 0.45 0.45 0.45 0.45 0.45 0.45 0.45 0.45 0.45 0.45 0.45 Shade:
Irrig'n Area(No storage):	**300**	m^2	P2	0.8 0.8 0.8 0.8 0.8 0.8 0.8 0.8 0.8 0.8 0.8 0.8 Fescue:
Application Rate:	**2.0**	mm	Q	1 1 1 1 1 1 1 1 1 1 1 1 Woodlot
Nitrogen in Effluent:	30	mg/L	R	
Denitrification Rate:	20	%	S	
Plant Uptake:	220	kg/ha/y	T	
Average daily seepage:	2.5	mm	U	
Annual N load:	5.26	kg/yr	V	
Area for N uptake:	**239**	m^2	W	
Application Rate:	**2.5**	mm	X	
Irrig'n Area (slopes 10%-20%)	**360**	m2	Z	
Application Rate:	**1.7**	mm	Z1	

NITROGEN UPTAKE:

Species:	Kg/ha.yr	pH	Species:	Kg/ha.yr	pH	Species:	Kg/ha.yr	pH
Ryegrass	200	5.6-8.5	Bent grass	170	5.6-6.9	Grapes	200	6.1-7.9
Eucalyptus	90	5.6-6.9	Couch grass	280	6.1-6.9	Lemons	90	6.1-6.9
Lucerne	220	6.1-7.9	Clover	180	6.1-6.9	C cunn'a	220	6.1-7.9
Tall fescue	150-320	6.1-6.9	Buffalo (soft)	280	6.1-6.9	P radiata	150	5.6-6.9
Rye/clover	220		Sorghum	90	5.6-6.9	Poplars	115	5.6-8.5

Increase land application area by 20%.

RAINFALL DATA

Station: Longwarry (Gooneparoo) **Number:** 85208 **Opened:** 1969 **Now:** Open

Lat: 38.07° S **Lon:** 145.77° E **Elevation:** 50 m

Statistic	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Mean	59.5	50.3	59.0	68.2	75.3	69.9	71.4	83.2	90.5	87.6	83.9	72.4	898.3
Lowest	5.0	2.2	15.7	15.5	17.4	10.6	17.4	19.0	28.2	19.7	23.6	4.5	614.4
5th %ile	8.1	5.7	24.3	26.9	27.7	22.8	33.9	32.3	42.4	39.5	26.7	21.2	676.9
10th %ile	23.7	8.8	25.7	31.0	40.0	40.5	37.4	44.3	48.3	50.4	38.8	32.6	703.3
Median	58.6	39.7	52.1	63.8	79.6	61.3	64.9	74.4	85.1	82.6	82.2	67.4	888.8
90th %ile	92.2	114.9	100.6	114.9	98.3	115.3	112.0	132.7	141.9	142.3	130.2	128.1	1081.0
95th %ile	114.4	152.6	113.7	133.1	132.1	119.9	129.0	143.2	155.7	146.8	145.4	140.5	1084.7
Highest	138.4	190.2	186.4	165.8	158.0	137.0	140.8	202.2	179.6	200.0	180.2	152.4	1102.0

APPENDIX C

LAND CAPABILITY ASSESSMENT TABLE
(Non-Potable Water Supply Catchments)

LAND FEATURE	LAND CAPABILITY RISK RATING				AMELIORATIVE MEASURES & RISK REDUCTION
	LOW	MEDIUM	HIGH	LIMITING	
Available land for LAA	Exceeds LAA and duplicate LAA requirements	Meets LAA and duplicate LAA requirements	Meets LAA and partial duplicate LAA requirements	Insufficient LAA area	Non-limiting for trenches & beds: Full reserve area available. Non-limiting for subsurface irrigation.
Aspect	North, north-east and north-west	East, west, south-east, south-west	South	South, full shade	Southern aspect.
Exposure	Full sun and/or high wind or minimal shading	Dappled light (partial shade)	Limited light, little wind to heavily shaded all day	Perpetual shade	Partial shade from nearby trees.
Slope Form	Convex or divergent side slopes	Straight sided slopes	Concave or convergent side slopes	Locally depressed	Free draining, however finished LAA surface requires smoothing and redistribution of topsoil.
Slope gradient:					
Trenches and beds	<5%	5% to 10%	10% to 20%	>20%	14.3%-16%: High risk factor for trenches.
Subsurface irrigation	<10%	10% to 30%	30% to 40%	>40%	14.3%-16% Non-limiting for subsurface irrigation.
Site drainage: runoff/run-on	LAA backs onto crest or ridge	Moderate likelihood	High likelihood	Cut-off drain not possible	Unremarkable. Cut-off drain required up-slope.
Landslip[1]	Potential	Potential	Potential	Existing	Unremarkable.
Erosion potential	Low	Moderate	High	No practical amelioration	All runoff to be dispersed without concentrating flows. LAA stabilised with gypsum (dispersive soils).
Flood/inundation	Never		<1%AEP	>5% AEP	Unremarkable.
Distance to surface waters (m)	Buffer distance complies with Guideline requirements		Buffer distance does not comply with Guidelinee requirements	Reduce buffer distance not acceptable	450 metres to watercourse.
Distance to groundwater bores (m)	No bores on site or within a significant distance	Buffer distances comply with Guideline	Buffer distances do not comply with Guideline	No suitable treatment method	No bores within a significant distance (800m).
Vegetation	Plentiful/healthy vegetation	Moderate vegetation	Sparse or no vegetation	Propagation not possible	Existing vegetation is suitable.
Depth to water table (potentiometric) (m)	>2	2 to 1.5	<1.5	Surface	Water table is between 10-20m.
Depth to water table (seasonal perched) (m)	>1.5	<0.5	0.5 to 1.5	Surface	Perching unlikely.
Rainfall[2] (Mean) (mm)	<500	500-750	750-1500	>1500	871mm. Non-limiting for trench and beds. Non-limiting for subsurface irrigation - Design by water balance.
Pan evaporation (mean) (mm)	>1250	1000 to 1250	750 to 1000	<750	1040mm. Design by water balance.
SOIL PROFILE CHARACTERISTICS					
Structure	High or moderately structured	Weakly structured	Structureless, massive or hardpan		Maintain structure by gypsum application (dispersive soils).
Fill materials	Nil or mapped good quality topsoil	Mapped variable depth and quality materials	Variable quality and/or uncontrolled filling	Uncontrolled poor quality/unsuitable filling	No fill present.
Thickness: (m)					
Trenches and beds	>1.4		<1.4	<1.2	Limiting for trenches and beds.
Subsurface irrigation	1.5+	1.0 to 1.5	0.75-1.0	<0.75	Non-limiting for irrigation systems.
Permeability[3] (limiting horizon) (m/day)	0.15-0.3	0.03-0.15 0.3-0.6	0.01-0.03 0.6-3.0	>3.0 <0.03	Non-limiting for trenches. Non-limiting for irrigation but requires renovation.
Permeability[4] (buffer evaluation) (m/day)	<0.3	0.3-3	3 to 5	>5.0	Evaluate flow times via Darcy's Law (assume 1m/day for residual materials).
Stoniness (%)	<10	10 to 20	>20		Unremarkable
Emerson number	4, 5, 6, 8	7	2, 3	1	Non-dispersive topsoil, dispersive subsoils. Apply gypsum to improve ksat and to create and maintain stable peds.
Dispersion Index	0	1-8	8-15	>15	Non-dispersive topsoil, dispersive subsoils. Apply gypsum to improve ksat and to create and maintain stable peds.
Reaction trend (pH)	5.5 to 8	4.5 to 5.5	<4.5 >8		6.2pH in topsoil. Ideal range for grasses.
E.C. (dS/m)	<0.8	0.8 to 2	>2	>2.0	Non-restrictive.
Sodicity (ESP) (%)	<6	6 to 8	>8	>14	Sodic. Inferred from Emerson, Dispersion Index and Free swell.
Free swell (%)	<30	30-80	80-120	>120	0%-30%. Non- to low-swelling soils.

There are limiting and high-risk factors for primary effluent trench systems (aspect, slope gradient, rainfall, soil profile thickness, colloid stability).

There are no limiting factors for secondary effluent subsurface irrigation (after renovation with gypsum).

Evaluation of buffer distances via Darcy's Law shows EPA default buffer distances to be adequate.

Hence, in terms of the design engineering and management inputs required for sustainable on-site effluent disposal are rational and easily achieved without significant impost on the landowner.

[1] Landslip assessment based on proposed hydraulic loading, slope, profile characteristics and past and present land use.
[2] Mean monthly rainfalls used in water balance analyses.
[3] Saturated hydraulic conductivity estimated from data base and laboratory tests.
[4] Saturated hydraulic conductivity estimated from AS/NZS1547:2012 and data base.

APPENDIX D

MANAGEMENT PLAN

Land Capability Assessment
[redacted]
CONSULTANTS IN THE AGRICULTURAL SCIENCES

53 Telford Drive, Berwick VIC 3806
Email: info@lcavictoria.com.au

LCA05032025 – MARCH/2025

MANAGEMENT PLAN
FOR
ON-SITE EFFLUENT DISPOSAL VIA SUBSURFACE IRRIGATION
AT
16-18 HENRY ROAD, BUNYIP VIC 3815

1. INTRODUCTION

This document identifies the significant land-soil unit constraints (as identified in LCA05032025) and their management and day-to-day operation and management of the on-site effluent system.

This management plan is to be read in conjunction with our land capability assessment for this land-soil unit (LCA05032025).

2. SIGNIFICANT LAND-SOIL UNIT CONSTRAINTS

2.1 Allotment Size. The day-to-day operation and management of on-site effluent systems, as described below, is not constrained by lot size or geometry.

Although all requirements of *SEPPs* have been met or exceeded through conservative design, prudence dictates that individual lot owners assiduously follow the management programme given in Section 4, below.

2.2 Nitrogen Attenuation. To reduce nitrates to insignificant levels, the effluent should not contain more than 30mg/litre total nitrogen.

Provided the irrigation areas are at least as large as those required to satisfy the nitrogen loading, as described in LCA05032025 Sections 1.3.1.12 and 2.2.3.2, and that the (specified) grass is cut and (periodically) harvested, nitrogen will be attenuated on-site.

2.3 Hydraulic Conductivity. The soils of this site are dispersive light clays with a low swelling potential and a low hydraulic conductivity. The hydraulic conductivity is significantly influenced by soil structure, soil colloid stability and swell characteristics. Breakdown or reduction of these soil parameters over time may manifest as reduced performance of the irrigation system. The monitoring and inspection regime detailed in Section 4.7.2, below, should be adhered to.

2.4 Site Drainage. Our recommendations for on-site effluent disposal have allowed for incident rainfall only (not surface flow or lateral subsurface flow) and are conditional on the installation of a cut-off drain, which should be placed upslope of the disposal area. Care should be taken to ensure that the intercepted and diverted surface waters are discharged well away and down slope of the disposal field (see LCA05032025 Drawings 2 and MP1).

This diverted water should also be discharged in a manner to avoid scouring and/or erosion. It may be appropriate to discharge the water onto a stone/rubble dissipation area.

The owner should also ensure that any upslope land-soil unit works do not divert and/or concentrate surface water flows onto the disposal area.

2.5 Vegetation. Existing vegetation is suitable. The effluent disposal area has been sized via water and nutrient balance analyses utilising crop factors for pasture (rye/clover mix) under conditions of partial shade.

3. THE ONSITE EFFLUENT SYSTEM

The onsite effluent system consists of the influent (kitchen, laundry, bathrooms and toilets), a load balancing tank/facility (if any), the treatment plant (a device to treat the effluent to at least the secondary effluent standard (20/30)), the irrigation area including effluent distribution system (delivery pipes and drippers), prescribed irrigation area vegetation, associated infrastructure (cut-off drain, outfall areas, fencing), a service and maintenance programme and on-going management.

4. MANAGEMENT

The owner is required to understand (and ensure that tenants understand) that sustainable operation of the onsite effluent system is not automatic. Sustainable operation requires on-going management, as outlined below.

4.1 Effluent. Effluent will be generated from a 4-bedroom (equivalent) residence and will include black and grey water (all wastes).

4.1.2 Effluent Quality. Effluent should be treated to a standard that meets or exceeds the water quality requirements of the secondary effluent standard (20/30 standard for BOD/SS).

Operation and maintenance shall be carried out in accordance with *AS/NZS 1547:2012* and a ”system specific” JAS/ANZ accreditation, as appropriate.

4.1.3 Effluent Quantity. The daily effluent volume of 600 litres has been calculated from *EPA Victoria - Guideline for onsite wastewater management (May 2024) Table 4-1* and assumes a 4-bedroom (equivalent) residence with onsite roof water tank supply and WELS-rated water-reduction fixtures and fittings – minimum 4 Stars for dual-flush toilets, shower-flow restrictors, aerator taps, flow/pressure control valves and minimum 3 Stars for all appliances.

4.2 Treatment System. No specific treatment system is recommended, however the treatment system must have current AS/NZS accreditation, which matches effluent volumes with plant capacity. For subsurface irrigation, it is assumed that the design, construction, operation and maintenance are carried out in accordance with *AS/NZS1547:2012* and a “system specific” JAS/NZS accreditation.

4.3 Irrigation Area. The irrigation area has been determined from the results of the water and nutrient balance analyses and AS/NZS 1547:*2012*, *Appendix M*.

4.3.1 Effluent Area Requirement. For a daily effluent flow of 600 litres and to satisfy the requirement for no surface rainwater flow in the mean wet year, on-site attenuation of nutrients and after adjusting for slope the effluent should be applied to an irrigation area of 360m^2.

Effluent distribution is as detailed in Section 4.3.2, below.

Any landscaping and/or planting proposals require endorsement from the Cardinia Shire Council.

4.3.2 Distribution System. The distribution system must achieve controlled and uniform dosing over the irrigation area. A small volume of treated effluent should be dosed at predetermined time intervals throughout the day via a pressurised piping network that achieves uniform distribution over the entire irrigation area.

Uniform delivery pressure of the effluent throughout the distribution system is essential. Drip rates should not vary by more than 10% from the design rate over the whole of the system.

To minimise uneven post-dripper seepage, the distribution pipes must be placed parallel with slope contours.

Line spacing shall be not closer than 1000mm under any circumstances.

To facilitate the creation of transient aerobic and anaerobic soil conditions we recommend that as part of the daily irrigation process, the effluent area be irrigated sequentially by zones.

4.3.3. Soil Renovation: Soils are dispersive and require amelioration. To create and maintain water-stable peds (under irrigation with saline effluent), soil renovation in the form of gypsum application is required at the rate of 1kg/m^2. Initially, prior to the installation and operation of the effluent irrigation system gypsum is to be broadcast over the land application area at the rate of 0.5kg/m^2. Following that gypsum shall be broadcast

again over the effluent area at the rate of 0.25 kg/m^2 in every two winter months and 0.25kg/m^2 in every 3 summer months until the determined gypsum application of 1kg/m^2 is reached.

If the determined gypsum application of 1kg/m^2 is not reached by the time of the installation and operation of the effluent irrigation system gypsum shall be broadcast again over the effluent area at the rate of 0.25 kg/m^2 in every winter month and 0.25kg/m^2 in every 1.5 summer months.

After reaching the determined gypsum application of 1kg/m^2 we recommend sampling and testing to assess the effectiveness of the gypsum application. This testing will determine future application rate and frequency of application.

Gypsum requirement assumes the gypsum contains 19% Calcium and 15% Sulphur. Gypsum is to be fine ground “Grade 1” agricultural quality and shall be reapplied every 3 years at the rate of 0.5kg/m^2.

4.3.4 Buffer Distances. The water balance analysis has shown that potential surface rainwater flows from the effluent area would be restricted to episodic events.

The estimated hydraulic properties of the upper soil materials and hydraulic gradient (equivalent to the ground slope and regional gradients) have been used to evaluate (via Darcy’s Law) the buffer distances with respect to subsurface flows.

Our analysis and evaluation have shown that the default setback distances given in *EPA Victoria - Guideline for onsite wastewater management (May 2024)*, *Table 4-10* are conservative and can be applied without amendment.

For a building located downslope of an effluent field, your engineer should evaluate the integrity of building foundations with respect to the assigned buffer distance (at least 3 metres).

Buffer distances are to be applied exclusive of the irrigation area.

4.3.5 Buffer Planting. All downslope (Title inclusive) buffers may be required to filter and renovate abnormal surface discharges. Hence, they are to be maintained with existing or equivalent groundcover vegetation.

4.3.6 Buffer Trafficking. On all allotments, buffer trafficking should be minimised to avoid damage to vegetation and/or rutting of the surface soils.

Traffic should be restricted to ‘turf’ wheeled mowing equipment and to maintenance, monitoring and inspections by pedestrians, where possible.

4.4 Vegetation. The system design for on-site disposal includes the planting and maintenance of suitable vegetation, as specified in LCA05032025 and/or similar documents.

Specifically, this irrigation area has been sized (in part) utilising crop factors and annual nitrogen uptake for a rye/clover eq mix.

The grass needs to be harvested (mown and periodically removed from the irrigation area).

Where a variation to recommended grass species is proposed, it must be demonstrated that the nitrogen uptake and crop factors (as specified in LCA05032025 Appendix B – water and nutrient balance) are met or exceeded.

4.5 Verification. The Council is to be satisfied that the effluent system has been constructed as designed with appropriate engineering endorsement and underwriting.

4.6 Associated Infrastructure. The following items are an integral part of the onsite effluent system.

4.6.1 Cut-off drains. Cut-off drains are designed to prevent surface water flows from entering the effluent area. They should be constructed and placed around the effluent area, as shown in Drawings 2 and MP1.

4.6.2 Outfall areas. All pipe outfalls should be at grade and designed to eliminate scour and erosion.

A grassed outfall would normally be adequate. However, should monitoring and inspections reveal rill or scour formation, the outfall will need to be constructed so that energy is satisfactorily dissipated

Should this situation occur, professional advice is to be sought.

4.6.3 Fencing. The disposal area is to be a dedicated area. Adequate fencing must be provided to prevent stock, excessive pedestrian and vehicular movements (if any) over the area.

4.7 Service and Maintenance Programme. The minimum requirements for servicing and maintenance are set out in the relevant JAS/ANZ accreditation and the manufacturer's recommendations.

4.7.1 Treatment Plant. Aerated treatment plants and sand filters should be serviced at least one time per year (or as recommended in the JAS/ANZ accreditation) and the effluent should be sampled and analysed as required by the JAS/ANZ accreditation). The local authority is to ensure compliance.

The manufacturer's recommendations are to be followed. Generally, low phosphorous and low sodium (liquid) detergents should be used. Plastics and other non-degradable items should not be placed into the tanks. Paints, hydrocarbons, poisons etc should not be disposed of in sinks or toilets. Advice from a plumber should be obtained prior to using drain cleaners, chemicals and conditioners. It is important to ensure that grease does not accumulate in the tanks or pipes. Grease and similar products should be disposed of by methods other than via the on-site effluent system.

4.7.2 Monitoring and Inspections. We recommend that the mandatory testing and reporting as described in the *EPA Victoria - Guideline for onsite wastewater management (May 2024) Section 6*, include an annual (post spring) and post periods of heavy and/or prolonged rainfall report on the functioning and integrity of the distribution system and on the functioning and integrity of the cut-off drains, outfall areas and soil media.

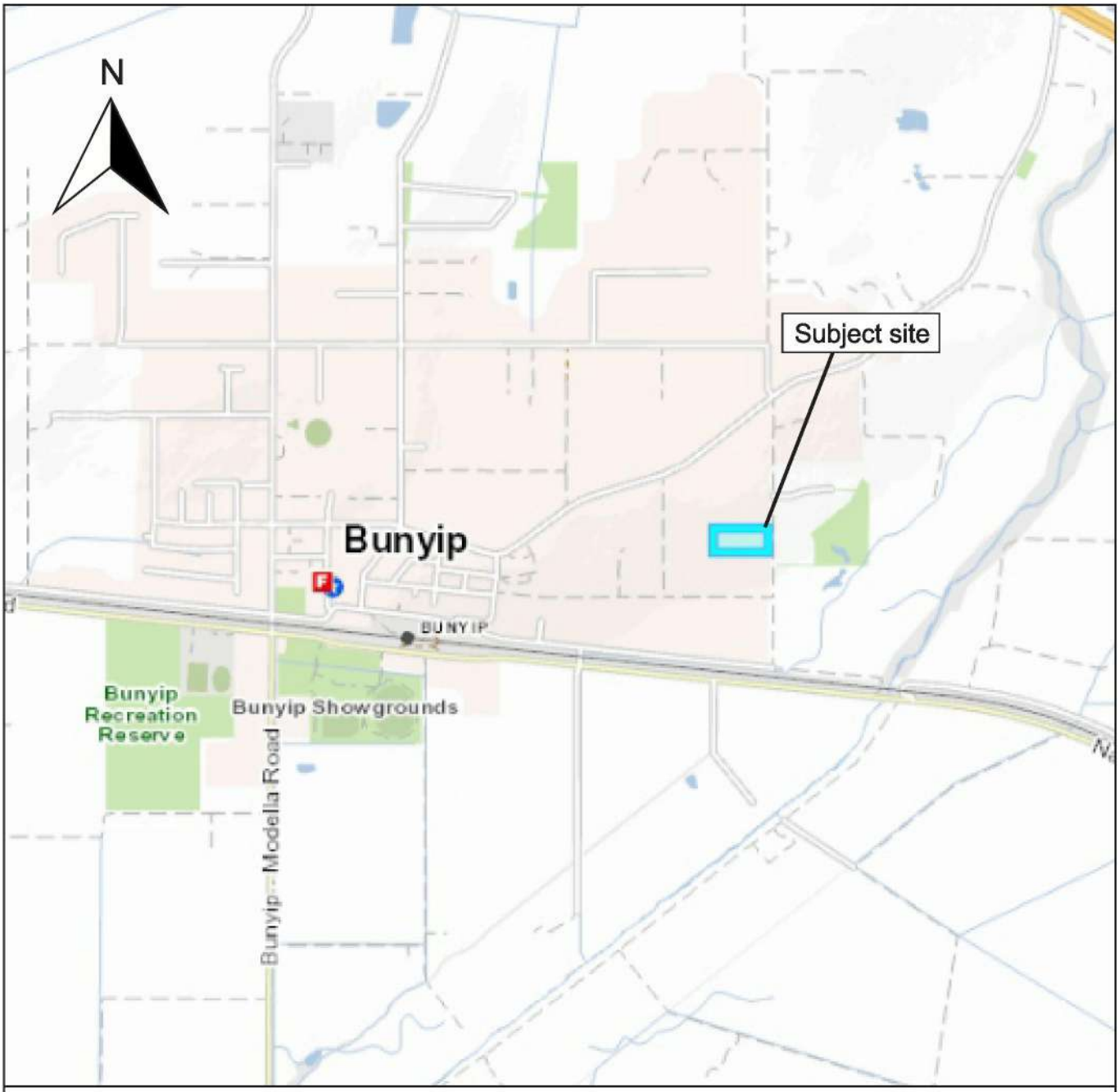
The effluent areas should be regularly inspected for excessively wet areas and vegetation integrity.

The inspection regime described in LCA05032025, Section 2.2.7, should be strictly adhered to.

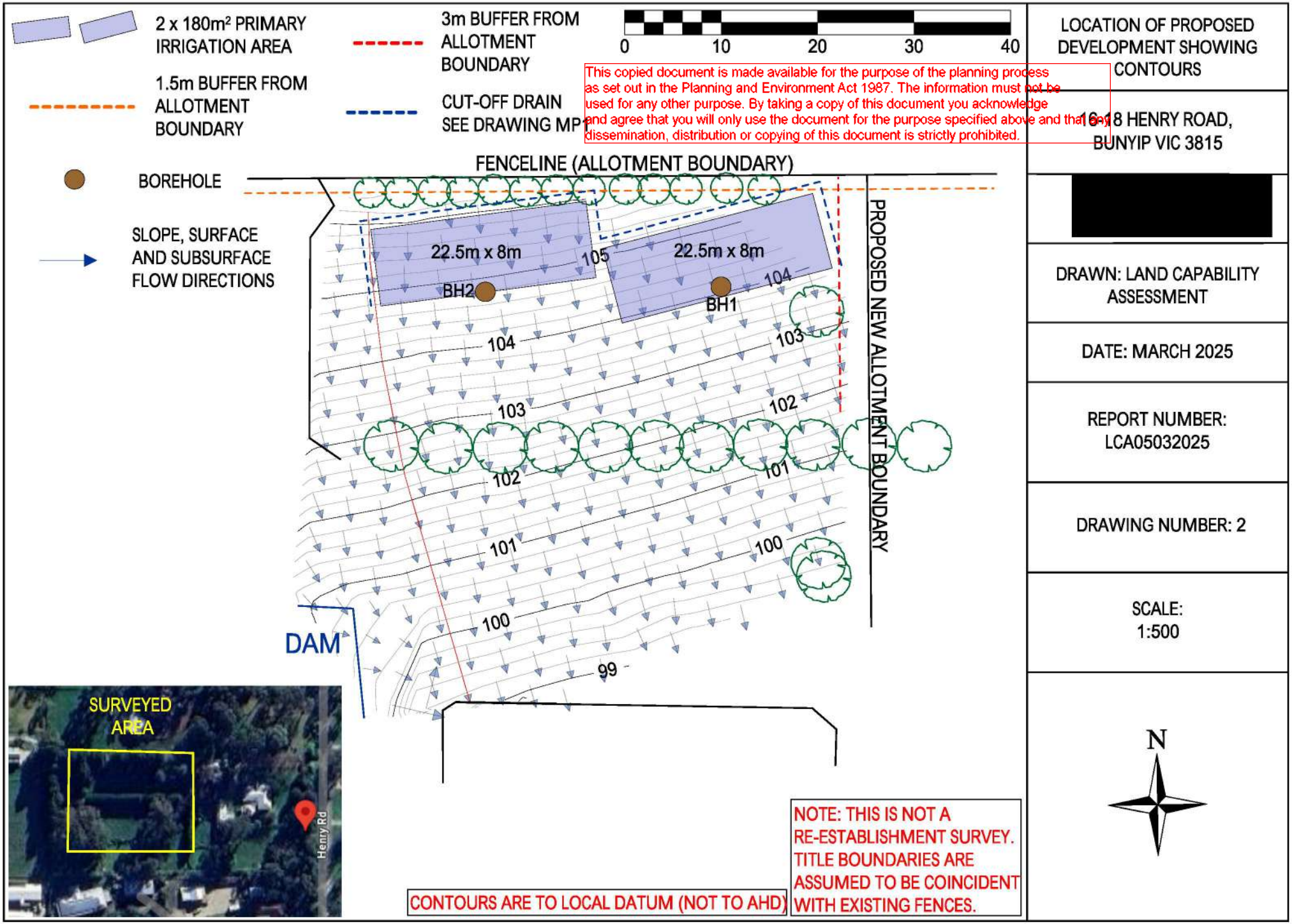
[redacted]

PRINCIPAL SOIL SCIENTIST
LAND CAPABILITY ASSESSMENT

[redacted]



LOCATION OF SUBJECT SITE	
16-18 HENRY ROAD, BUNYIP VIC 3815	
[redacted]	
Drawn [redacted]	Report number: LCA05032025
Date: March 2025.	Drawing number: 1



LOCATION OF PROPOSED DEVELOPMENT SHOWING CONTOURS

16-18 HENRY ROAD, BUNYIP VIC 3815

[redacted]

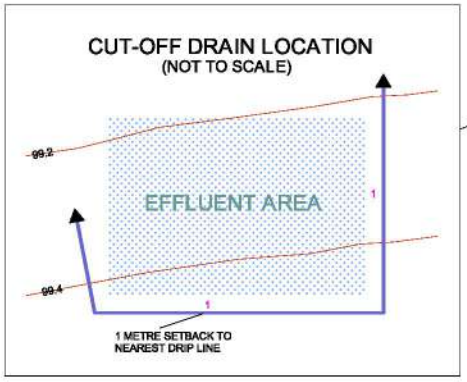
DRAWN: LAND CAPABILITY ASSESSMENT

DATE: MARCH 2025

REPORT NUMBER: LCA05032025

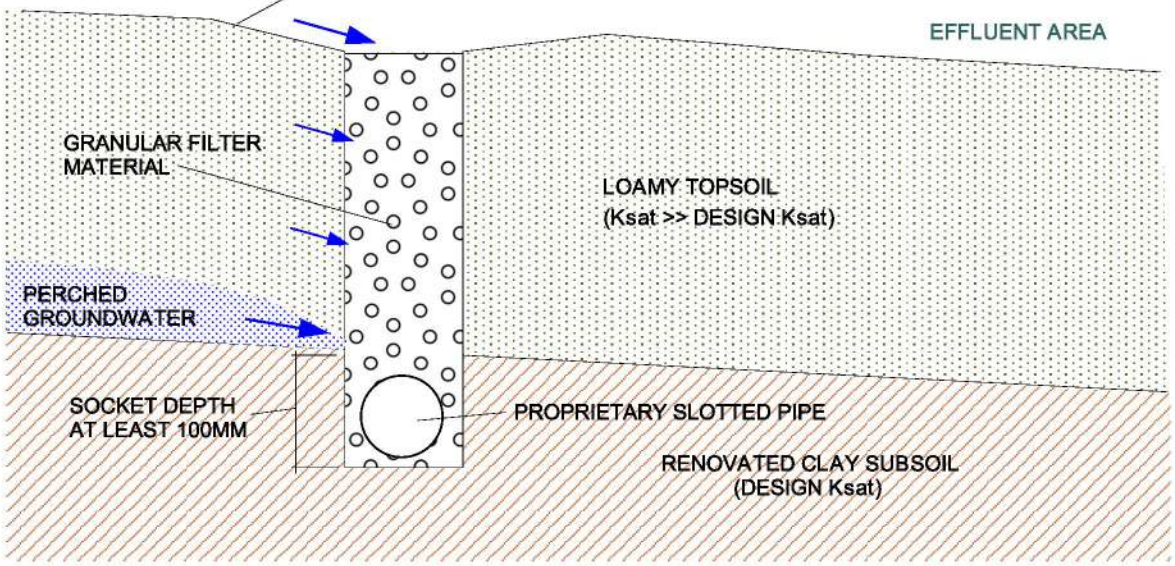
DRAWING NUMBER: 2

SCALE: 1:500



NOTE: CUT-OFF DRAIN LOCATION IS SCHEMATIC ONLY. FINAL LOCATION TO BE DETERMINED BY DESIGN ENGINEER AS PART OF SITE DRAINAGE DESIGN.

SURFACE REGRADED BY CUTTING TO FACILITATE COLLECTION OF SURFACE FLOWS - DEGREE OF CUT SLOPE LIMITED BY REQUIREMENTS FOR SAFE & EFFICIENT MOWING/MAINTENANCE



NOTES:
1. DRAIN TO BE DESIGNED, CONSTRUCTED & MAINTAINED TO ENSURE THAT NO SURFACE & PERCHED GROUNDWATER FLOWS ENTER THE IRRIGATION AREA.
2. DRAIN TO BE LOCATED ON ALL UPSLOPE SIDES OF IRRIGATION AREA (NO CLOSER THAN 1M FROM NEAREST SUBSURFACE DISTRIBUTION LINE).
3. DRAIN TO HAVE UNSPECIFIED FALL.
4. MINIMUM SOCKET DEPTH OF 100MM INTO CLAY SUBSOIL (WHERE ENCOUNTERED) OR AT LEAST 200MM DEEP.
5. DRAIN CROSS SECTIONAL AREA RELATED TO DESIGN FLOWS AS DETERMINED BY A SUITABLY QUALIFIED AND EXPERIENCED ENGINEER.
6. OFF-SITE DRAIN OUTFALL TO LEGAL POINT OF DISCHARGE SUBJECT TO LOCAL AUTHORITY REQUIREMENTS.
7. ON-SITE DRAIN OUTFALL TO INCLUDE APPROPRIATE ENERGY DISSIPATION TO AVOID EROSION.
8. ALL DRAINS AND OUTFALL AREAS SUBJECT TO POST-SPRING INSPECTION.

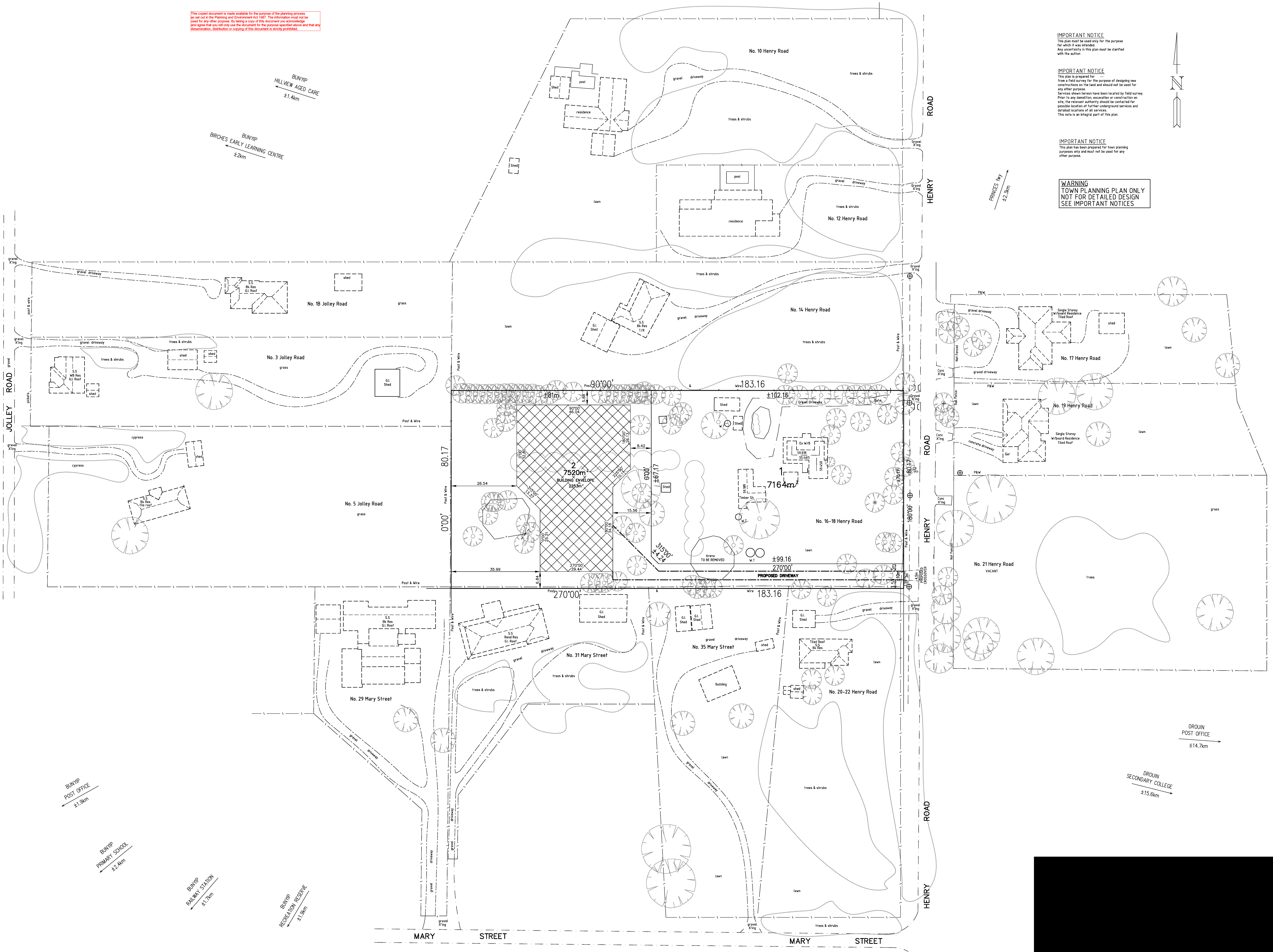
NOTE: DRAWING NOT TO BE USED FOR SET-OUT PURPOSES

CUT-OFF DRAIN DETAIL FOR EFFLUENT DISPOSAL FIELDS

16-18 HENRY ROAD, BUNYIP VIC 3815

[redacted]

Scale: 1:10 (Approximately)	Drawn: P.R.W.	Report Number: LCA05032025
Contour Interval: N/A	Date: March 2025	Drawing Number: MP1



IMPORTANT NOTICE

This plan must be used only for the purpose for which it was intended.
Any uncertainty in this plan must be clarified with the author.

IMPORTANT NOTICE

This plan is prepared for --
from a field survey for the purpose of designing new constructions on the land and should not be used for any other purpose.
Services shown hereon have been located by field survey.
Prior to any demolition, excavation or construction on site, the relevant authority should be contacted for possible location of further underground services and detailed locations of all services.
This note is an integral part of this plan.

IMPORTANT NOTICE

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WARNING
TOWN PLANNING PLAN ONLY
NOT FOR DETAILED DESIGN
SEE IMPORTANT NOTICES

[redacted]

PLAN OF SUBDIVISION

EDITION

PS 928346N

LOCATION OF LAND

PARISH: BUNYIP

TOWNSHIP: BUNYIP

SECTION: 7

CROWN ALLOTMENT: (PART) 3

CROWN PORTION:

TITLE REFERENCES: VOL 9649 FOL 421

LAST PLAN REFERENCE/S: LOT 1 ON TP 103786V

POSTAL ADDRESS: (At time of subdivision) 16–18 HENRY ROAD BUNYIP 3815

MGA2020 CO-ORDINATES (of approx centre of land in plan) E 388 958 N 5 782 768 ZONE: 55

VESTING OF ROADS AND/OR RESERVES

IDENTIFIER	COUNCIL/BODY/PERSON
NIL	NIL

NOTATIONS

SURVEY:
This plan is/~~is not~~ based on survey.

STAGING:
This ~~is~~/is not a staged subdivision

Planning Permit No. –

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

In Proclaimed Survey Area No. –

NOTATIONS

DEPTH LIMITATION: 15.24 metres applies to all of the land.

WARNING
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EASEMENT INFORMATION

LEGEND A–Appurtenant Easement E–Encumbering Easement R–Encumbering Easement (Road)

Section 12(2) of the Subdivision Act 1988 applies to the whole of this plan

Easement Reference	Purpose	Width (Metres)	Origin	Land Benefited/In Favour Of

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PRELIMINARY PLAN ONLY
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M. J. Reddie Surveys Pty Ltd
ABN 49 005 965 257
1 Horner Street, Beaconsfield. 3807
P.O. Box 268, Berwick. 3806
Phone (03) 9707 4117 Fax (03) 9707 4428

REF: 24–10–219 FILE: KMH917

ORIGINAL SHEET SIZE: A3

SHEET 1 OF 2

LUKE M. REDDIE / VERSION 3

PS 928346N

N

APPROX TRUE NORTH

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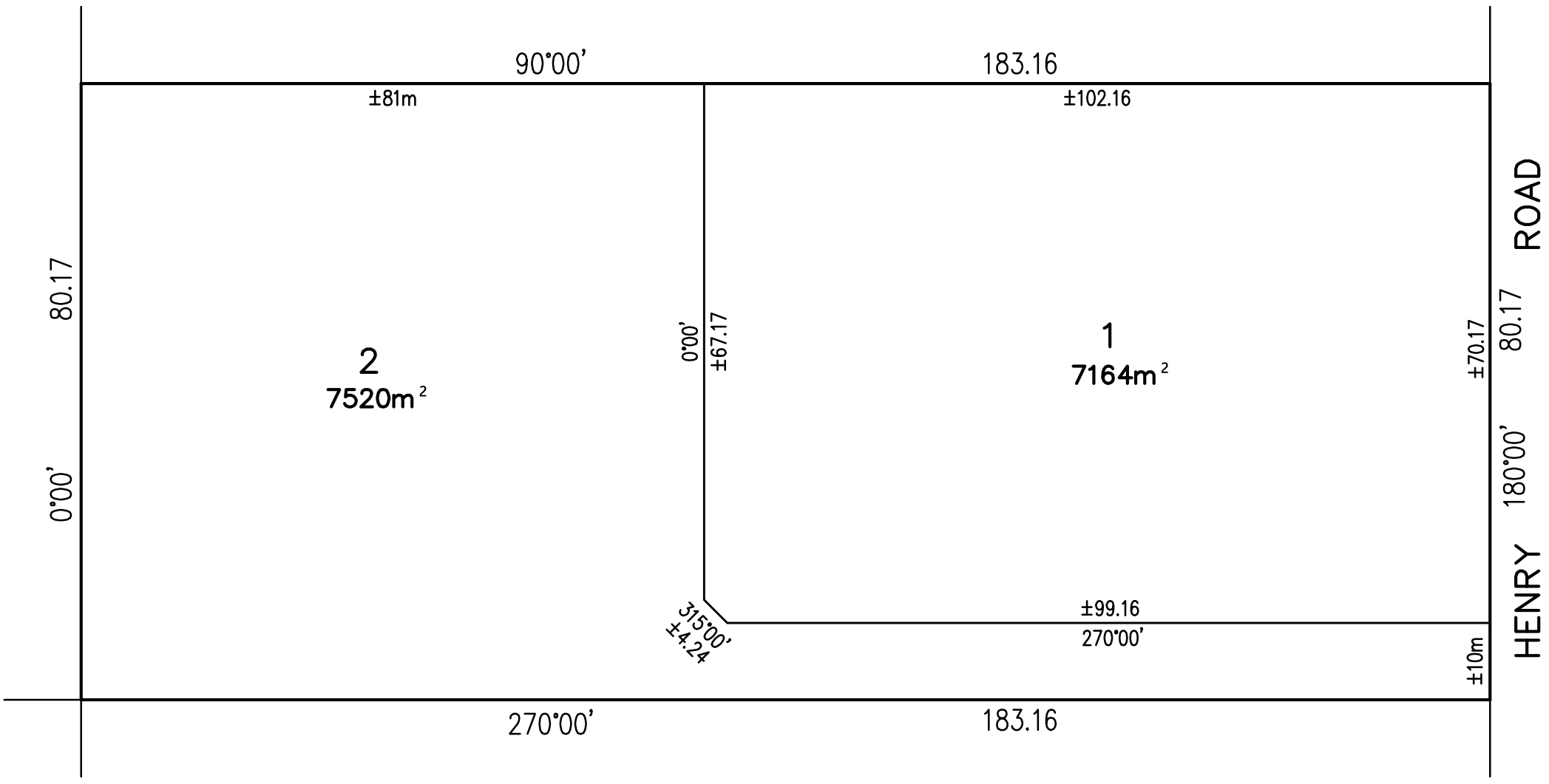

M. J. Reddie Surveys Pty Ltd
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1 Horner Street, Beaconsfield. 3807
P.O. Box 268, Berwick. 3806
Phone (03) 9707 4117 Fax (03) 9707 4428

SCALE 1:750	0 7.5 15 30 45 LENGTHS ARE IN METRES	ORIGINAL SHEET SIZE : A3	SHEET 2
LUKE M. REDDIE / VERSION 3			

PS 928346N

N

APPROX TRUE NORTH

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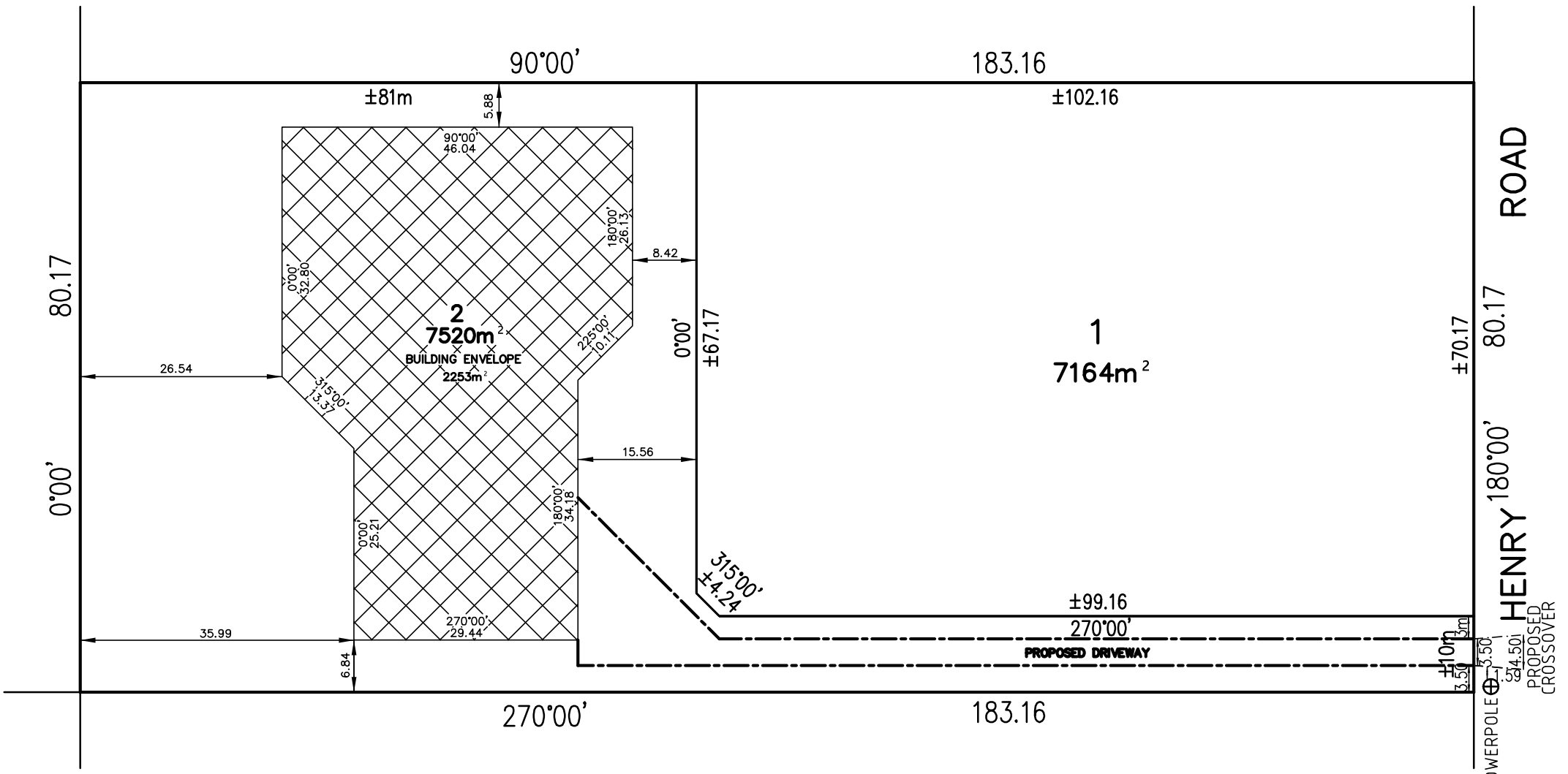
SEE IMPORTANT NOTICES

PROPOSED AREAS			
(square meters)	Buidling envelope (square meters)	Garden area (square meters)	Garden Area Percentage
Lot 2 (7520m)	Buidling envelope 2253m	±5267m	77%



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SCALE 1:750	0 7.5 15 30 45 LENGTHS ARE IN METRES	ORIGINAL SHEET SIZE : A3	SHEET 3
LUKE M. REDDIE / VERSION 3			