

NOTICE OF AN APPLICATION FOR PLANNING PERMIT

The land affected by the application is located at:	6 Link Road, Lang Lang VIC 3984 L1 PS820562 V12030 F315
The application is for a permit to:	Subdivision of land into multiple lots, native vegetation removal and creation of access to a Transport Zone 2.
The applicant for the permit is:	Speedie Developments
The application reference number is:	T230242
You may look at the application and any documents that support the application at the office of the Responsible Authority:	<p>Cardinia Shire Council 20 Siding Avenue Officer 3809</p> <p>This can be done during office hours and is free of charge.</p> <p>Documents can also be viewed on Council's website: https://www.cardinia.vic.gov.au/advertisedplanningapplications</p>

Any person who may be affected by the granting of the permit may object or make other submissions to the responsible authority.

- An objection must
- * be sent to the Responsible Authority in writing, at Cardinia Shire Council, PO Box 7, Pakenham, Vic, 3810 or email at mail@cardinia.vic.gov.au.
 - * include the name and address of the objector/ submitter.
 - * include the application number and site address.
 - * include the reasons for the objection, and
 - * state how the objector would be affected.

The Responsible Authority will not decide on the application before:	13 January 2024
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If you object, the Responsible Authority will tell you its decision.

Please be aware that copies of objections/submissions received may be made available to any person for the purpose of consideration as part of the planning process.

For additional information or advice contact Cardinia Shire Council, Planning Department on 1300 787 624 or mail@cardinia.vic.gov.au.

Your objection/submission and personal information is collected by Cardinia Shire Council for the purposes of the planning process as set out in the *Planning and Environment Act 1987*. If you do not provide your name and address, Council will not be able to consider your objection/submission. Your objection/submission will be available free of charge at the Council office for any person to inspect and copies may be made available on request to any person for the relevant period set out in the *P&E Act*. You must not submit any personal information or copyright material of third parties without their informed consent. By submitting the material, you agree that the use of the material as detailed above does not breach any third party's right to privacy and copyright.



Application Summary

Portal Reference A22358WE

Basic Information

Proposed Use	To subdivide the land into 35 lots, roads, reserves and associated easements, generally in accordance with the attached plans.
Current Use	Vacant land.
Site Address	6 Link Road Lang Lang 3984

Covenant Disclaimer

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

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

Contacts

Type	Name	Address	Contact Details
Applicant	JSR Lang Lang Pty Ltd	PO BOX 151, HASTINGS VIC 3915	W: 5979-5000 E: reception@speedies.com.au
Owner	JSR Lang Lang Pty Ltd	PO BOX 151, HASTINGS VIC 3915	W: 5979-5000 E: reception@speedies.com.au
Preferred Contact	Andrew Lovelock Speedie Development Consultants Pty Ltd	PO BOX 151, HASTINGS VIC 3915	W: 5979-5000 E: reception@speedies.com.au

Fees

Regulation Fee Condition	Amount	Modifier	Payable
9 - Class 20 To subdivide land (35 Lots)	\$1,360.80	100%	\$1,360.80
Total			\$1,360.80



Civic Centre
20 Siding Avenue, Officer, Victoria

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



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

Email: mail@cardinia.vic.gov.au



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

Documents Uploaded

Date	Type	Filename
19-05-2023	Subdivision Plan	12990 Current Title.pdf
19-05-2023	Explanatory Letter	12990 CSC - Planning Application.pdf
19-05-2023	Additional Document	12990 Town Planning Report.pdf
19-05-2023	Additional Document	12990 Concept Subdivision Plans.pdf
19-05-2023	Additional Document	12990 Environmental Impact Assessment.pdf
19-05-2023	Additional Document	12990 Stormwater Management Strategy.pdf
19-05-2023	Additional Document	12990 Traffic & Transport Assessment.pdf
19-05-2023	Additional Document	12990 Site Fill Plan.pdf
19-05-2023	Additional Document	12990 Subdivision Servicing Plan.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	Speedle Development Consultants Pty Ltd	PO BOX 151, Hastings VIC 3915	W: 5979-5000 E: reception@speedies.com.au
Submission Date	19 May 2023 - 12:45: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



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

Application to amend a current planning application

Application number:	T230242 PA
Address of subject site	L1 PS820562 V12030 F315, 6 Link Road, Lang Lang VIC 3984

Pursuant to which section of the Planning and Environment Act 1987 is this amendment being made?	
Section 50 – Amendment to application at request of applicant before notice:	Yes
Section 50A - Amendment to application at request of responsible authority before notice:	<input type="checkbox"/>
Section 57A – Amendment to application after notice is given:	<input type="checkbox"/>

Applicant:	JSR Lang Lang Pty Ltd
Phone:	5979 5000
Email:	reception@speedies.com.au
Postal Address:	P O Box 151, Hastings Vic 3915

What is the purpose of the amendment? Please list all changes:
To include access to land in a transport 2 zone within the permit application

Declaration		
I declare that all the information in this application is true and correct and the owner (if not myself) has been advised of the planning permit application.		
Print name:		
Signature:		

Fees	
Amendment in accordance with Section 50 or 50A	Nil
Amendment pursuant to Section 57A	40% of the fee applicable to the original permit class plus the difference in fees if the amendment changes the class of permit to that with a higher application fee.

Lodgement of application

Your application can then be sent via email, mail or submitted in person at Council's Civic Centre.

Assistance

If any assistance in completing this form is required, we recommend you contact Council's Statutory Planning Unit on **1300 787 624** before lodging an application. Insufficient or unclear information may delay the processing of your application.

Note: 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.

Cardinia Shire Council
Civic Centre
20 Siding Avenue, Officer

PO Box 7
Pakenham 3810 (DX 81006 Pakenham)

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

National Relay Service (NRS)
TTY: 133 677 (ask for 1300 787 624)
Speak and Listen (speech-to-speech relay): 1300 555 727 (ask for 1300 787 624)

Translator Interpretation Service
131 450 (ask for 1300 787 624)






Application number:	T230242 PA
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Section 50A - Amendment to application at request of responsible authority before notice:	<input type="checkbox"/>
Section 57A – Amendment to application after notice is given:	<input type="checkbox"/>

Applicant:	JSR Lang Lang Pty Ltd
Phone:	5979 5000
Email:	reception@speedies.com.au
Postal Address:	P O Box 151, Hastings Vic 3915

[illegible]

Declaration	
I declare that all the information in this application is true and correct and the owner (if not myself) has been advised of the planning permit application.	
Print name:	
Signature:	

Fees	
Amendment in accordance with Section 50 or 50A	Nil
Amendment pursuant to Section 57A	40% of the fee applicable to the original permit class plus the difference in fees if the amendment changes the class of permit to that with a higher application fee.

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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.

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

VOLUME 12030 FOLIO 315

Security no : 124105865987D
Produced 05/05/2023 09:40 AM

LAND DESCRIPTION

Lot 1 on Plan of Subdivision 820562H.

PARENT TITLES :

Volume 11925 Folio 711 to Volume 11925 Folio 712
Created by instrument PS820562H 02/11/2018

REGISTERED PROPRIETOR

Estate Fee Simple

Sole Proprietor

JSR LANG LANG PTY LTD of UNIT 19 2 ENTERPRISE DRIVE BUNDOORA VIC 3083
AV779835U 24/06/2022

ENCUMBRANCES, CAVEATS AND NOTICES

MORTGAGE AV779836S 24/06/2022
NATIONAL AUSTRALIA BANK LTD

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.

AGREEMENT as to part Section 173 Planning and Environment Act 1987
AG197498K 18/11/2008

DIAGRAM LOCATION

SEE PS820562H FOR FURTHER DETAILS AND BOUNDARIES

ACTIVITY IN THE LAST 125 DAYS

NIL

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

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

Street Address: 6 LINK ROAD LANG LANG VIC 3984


ADMINISTRATIVE NOTICES

NIL

eCT Control 16089P NATIONAL AUSTRALIA BANK LTD
Effective from 24/06/2022

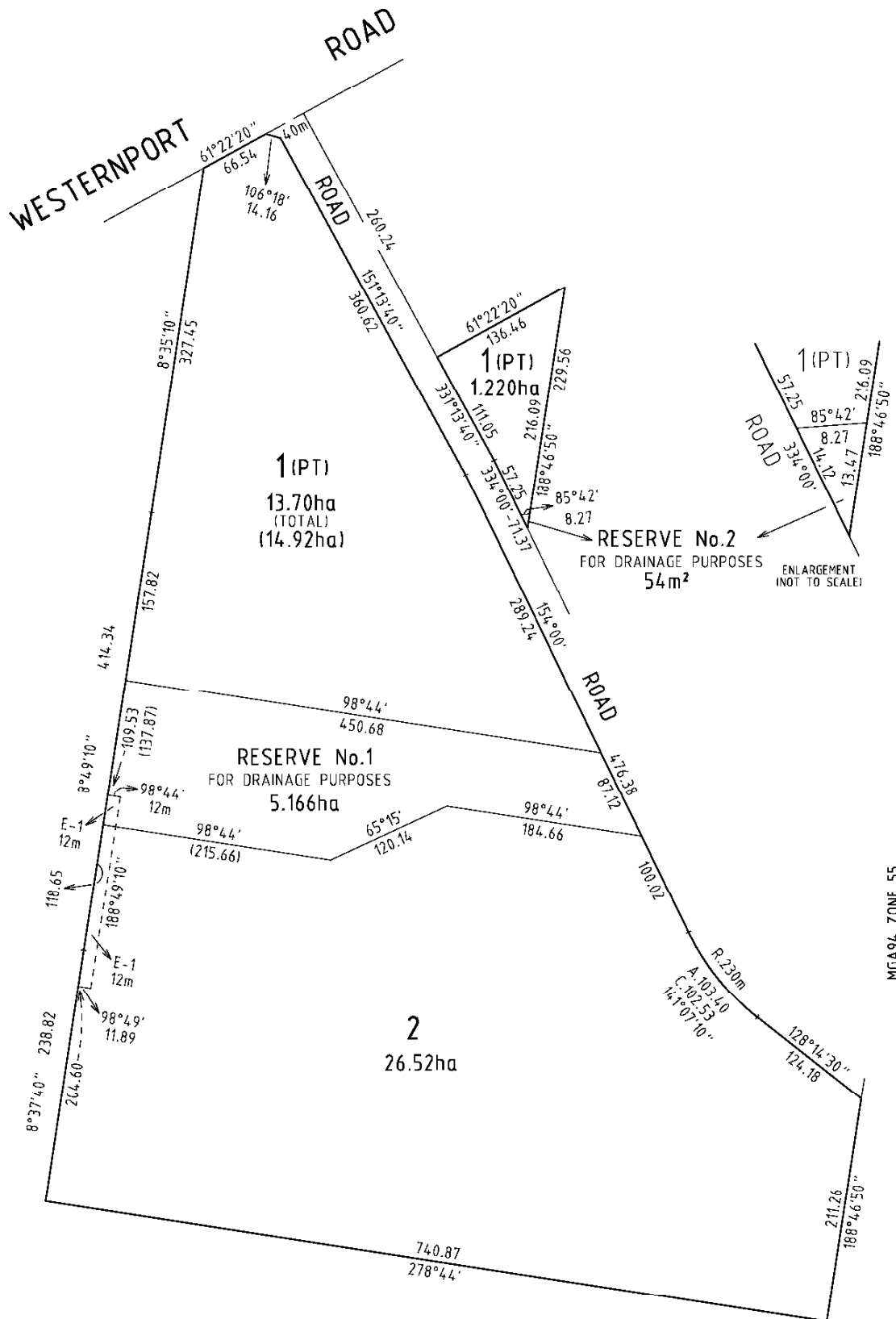
DOCUMENT END

Delivered from the LANDATA System by Dye & Durham Terrain Pty Ltd

PLAN OF SUBDIVISION				EDITION 1	PS820562H	
LOCATION OF LAND PARISH: LANG LANG TOWNSHIP: ---- SECTION: ---- CROWN ALLOTMENT: 12 (PART) CROWN PORTION ---- TITLE REFERENCE: VOL.11925 FOL.711, VOL.11925 FOL.712 LAST PLAN REFERENCE: LOTS B AND W ON PS728287S POSTAL ADDRESS MCDONALDS TRACK (AT TIME OF SUBDIVISION) LANG LANG 3984 MGA94 COORDINATES: E: 373 860 ZONE: 55 (OF APPROX. CENTRE OF PLANT) N: 5 762 885 GDA 94				Council Name: Cardinia Shire Council Council Reference Number: S18/114 Planning Permit Reference: planning permit not required SPEAR Reference Number: S122678T Certification This plan is certified under section 6 of the Subdivision Act 1988 Statement of Compliance This is a statement of compliance issued under section 21 of the Subdivision Act 1988 Public Open Space A requirement for public open space under section 18 of the Subdivision Act 1988 has not been made Digitally signed by: Sonia Higgins for Cardinia Shire Council on 19/10/2018		
VESTING OF ROADS AND/OR RESERVES				NOTATIONS		
IDENTIFIER	COUNCIL/BODY/PERSON			DEPTH LIMITATION - DOES NOT APPLY THIS IS NOT A STAGED SUBDIVISION THIS PLAN IS BASED ON SURVEY IN PS728287S TANGENT POINTS ARE SHOWN THUS . ————		
RESERVES Nos. 1 & 2	CARDINIA SHIRE COUNCIL					
EASEMENT INFORMATION						
LEGEND: A - Appurtenant Easement E - Encumbering Easement R - Encumbering Easement (Road)						
Easement Reference	Purpose	Width (Metres)	Origin	Land Benefited or in favour of		
E-1	DRAINAGE	SEE DIAG	PS728287S	CARDINIA SHIRE COUNCIL		
 Speedie Development Consultants Pty. Ltd. SURVEYORS, ENGINEERS, PLANNERS AND DEVELOPMENT CONSULTANTS 55 Marine Parade, Hastings, Vic 3915 (03) 5979 5000 Email: reception@speedies.com.au		SURVEYORS REF: 10240-B-S V2 Digitally signed by: andrew michael lovelock (Speedie Development Consultants Pty Ltd), Surveyor's Plan Version (2), 29/06/2018, SPEAR Ref: S122678T		CHKD - AML	ORIGINAL SHEET SIZE: A3	SHEET 1 OF 2 SHEETS
				PLAN REGISTERED TIME: 4.22PM DATE: 02/11/18 GARY M ROBERTSON Assistant Registrar of Titles		

PLAN OF SUBDIVISION

PS820562H



SURVEYORS REF: 10240-B-S V2

CHKD - AML

40 0 40 80 120
LENGTHS ARE IN METRES

SCALE
1:4000

ORIGINAL SHEET SIZE: A3

SHEET 2



Speedie Development Consultants
Pty. Ltd.
SURVEYORS, ENGINEERS, PLANNERS AND
DEVELOPMENT CONSULTANTS
55 Marine Parade, Hastings, Vic 3915 (03) 5979 5000
Email: reception@speedies.com.au

Digitally signed by: andrew michael lovelock (Speedie
Development Consultants Pty Ltd),
Surveyor's Plan Version (2),
29/06/2018, SPEAR Ref: S122678T

Digitally signed by:
Cardinia Shire Council,
19/10/2018,
SPEAR Ref: S122678T

Planning and Environment Regulations 1998 No. 8

Form 13

Section 181

APPLICATION BY RESPONSIBLE AUTHORITY FOR THE MAKING OF A
RECORDING OF AN AGREEMENT

PLANNING AND ENVIRONMENT ACT 1987

AG197498K

18/11/2008 \$104.90 173



Lodged By: Cardinia Shire Council
Name: [REDACTED]
Phone: (03) 59 454 265
Address: PO BOX 7, Pakenham Vic 3813
Ref: C60
9857 J



The authority having made an agreement referred to in Section 181(1) of the Planning and Environment Act 1987 requires a recording to be made in the Register for the land.

LAND:

Certificate of title:

- Lot 1 TP 140696M Volume 9886 Folio 727
- Lot 1 TP 140697K Volume 9886 Folio 728
- Lot 1 TP 140698H Volume 9886 Folio 729
- Lot 1 TP 140699F Volume 9886 Folio 730
- Lot 1 TP 529134R Volume 9886 Folio 731
- Lot 1 TP 140700A Volume 9886 Folio 732
- Lot 1 TP 140701X Volume 9886 Folio 733
- Lot A PS 542861X Volume 10954 Folio 301
- Lot 1 TP 529137K Volume 9886 Folio 735

AUTHORITY OR COUNCIL: Cardinia Shire Council
Municipal Offices, Henty Way, Pakenham

SECTION AND ACT UNDER WHICH AGREEMENT MADE:

Section 173 of the Planning and Environment Act 1987

A copy of the agreement is attached to this application.

Date: the 6 November 2008

[REDACTED]

Signature for the Authority

[REDACTED]

Name of Officer

This Agreement is made on the 6th day of November 2008

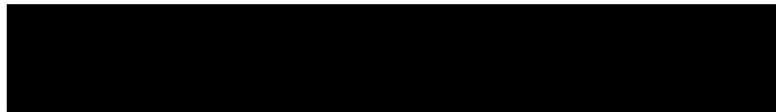
Between

Cardinia Shire Council of Henty Way, Pakenham, Victor
("the Council")

and



and



AG197498K



Recitals

A. The owner is or is entitled to be the registered proprietors of the land contained in the following Certificates of Title:

- Lot 1 TP 140696M Vol 9886 Fol 727
- Lot 1 TP 140697K Vol 9886 Fol 728
- Lot 1 TP 140698H Vol 9886 Fol 729
- Lot 1 TP 140699F Vol 9886 Fol 730
- Lot 1 TP 529134R Vol 9886 Fol 731
- Lot 1 TP 140700A Vol 9886 Fol 732
- Lot 1 TP 140701X Vol 9886 Fol 733
- Lot A PS 542861X Vol 10954 Fol 301
- Lot 1 TP 529137K Vol 9886 Fol 735

("the Land")

B. The Council is the Planning Authority for the purposes of Amendment C60 ("the Amendment") to the Cardinia Planning Scheme ("the Scheme")

C. The Council in its capacity as Planning Authority for the Scheme has prepared the Amendment. The Amendment, when approved will rezone part of the Land from Farming Zone to part Residential 1 Zone and part Industrial 1 Zone, apply a Development Plan Overlay (Schedule 14) to the Land and apply a Road Closure Overlay to part of Clarks Road.

The Council has resolved to adopt the Amendment subject to the execution of this Agreement.

The parties enter into this Agreement to achieve and advance the objectives of planning in Victoria and the objectives of the Scheme in respect of the Land

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The Agreement

1. Agreement to be binding on owners and their successors

- 1 (1) The parties acknowledge and agree that this Agreement is made under Section 173 of the Planning and Environment Act 1987.
- 1 (2) The parties agree that the obligations imposed on the Owner under this Agreement are intended to take effect as covenants which are annexed to and run at law and equity with the whole or any part of the Land and bind the Owner, its successors, transferees, and assigns, the registered proprietor from time to time of the Land or any part of the Land, on any person obtaining possession of the Land or any part of the Land, and on any mortgagee in possession of the Land or any part of the Land, as if each of those persons had individually executed this Agreement.
- 1 (3) The Owners must not sell, transfer, dispose of or part with possession of the Land or any part of it without first providing a copy of this Agreement to all prospective purchasers, lessees, mortgagees, chargees, transferees and assigns of the Land.

2. Covenants

- 2 (1) The Owner acknowledges that:
 - (a) The Land is located in close proximity to the Lang Lang Sewage Treatment Plant ("the Plant"). The amenity of the Land could be affected by odour emissions from the Plant;
 - (b) South East Water has advised Council that it proposes to relocate a facultative lagoon at the Plant which is expected to ensure that odour emissions from the Plant do not unreasonably affect the amenity of the Land. As at the date of this Agreement it is expected that these works will be completed by South East Water by June 2012
- 2 (2) The Owner covenants and agrees that the subdivision and development of the Land must only be conducted in accordance with a staging plan approved by Council and South East Water;
- 2 (3) Except with the prior written consent of Council, subdivision and development of the Land must only be conducted in accordance with the staging plan approved pursuant to Clause 2(2)

3. Terms and registration of this Agreement

- (1) The terms of this Agreement come into force immediately on execution by the parties, and runs with the Land.
- (2) The Owner covenants and agrees that the Owner will do all things necessary to give effect to this Agreement and consents to the Council making application to the Register of Titles to make a recording of this Agreement in the Register on the Certificate of Title of the Land in accordance with Section 181 of the Act and do all things necessary to enable the Council to do so including signing any further agreement, acknowledgement or document or procuring the consent to this

Agreement of any mortgagee or caveator to enable to the recording to be made in the Register under that section.

4. Cost

The Owner/s must bear the cost of and incidental to the making and the registration of this Agreement including the Council's legal expenses.

5. In this Agreement the words and expressions set out in this clause have the following meanings unless the context admits otherwise:

Agreement means this agreement and any agreement executed by the parties expressed to be supplemental to this agreement

Mortgagee means the person or persons registered or entitled from time to time to be registered by the Registrar of Titles as Mortgagee of the Land or any part of it

Owner means the person or persons registered or entitled from time to time to be registered by the Register of Titles as proprietor or proprietors of an estate in fee simple of the Land or any part of it and includes Mortgagee-in-possession.

Party or parties means the Owner and the Council under this Agreement as appropriate.

Scheme means the Cardinia Planning Scheme and any other planning scheme that applies to the Land.

6. Without limiting the operation or effect which this Agreement has, the Owner warrants that apart from the Owner and any other persons who has consented in writing to this Agreement, no other person has any interest, ether legal or equitable, in the Land which may be affected by this Agreement.
7. Without limiting the operation or effect that this Agreement has, the Owner must ensure that, until such time as a memorandum of this Agreement is registered on the title to the Land, successors in title shall be required to
- (a) give effect to and do all acts and sign all documents which will require those successors to give effect to this Agreement; and
 - (b) execute a deed agreeing to be bound by the terms of this Agreement.
8. Any time or other indulgence granted by the Council to the Owner or any variation of the terms and conditions of this Agreement or any judgement or order obtained by Council against the Owner will not in any way amount to a waiver of any of the rights or remedies of the Council in relation to the terms of this Agreement.
9. If a court, arbitrator, tribunal or other competent authority determines that a word, phrase, sentence, paragraph or clause of this Agreement is unenforceable, illegal or void then it must be severed and the other provisions of this Agreement will remain operative.

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10. It is acknowledged and agreed that this Agreement does not fetter or restrict the power or discretion of the Council to make any decision or impose any requirements or conditions in connection with the granting of any planning approval or certification of any plans of subdivision applicable to the Land or relating to any use or development of the Land including a condition or requirement in respect of any item of infrastructure which the Council considers is necessary having regard to the proposed use and development of the Land or any part of it.

11. In this Agreement unless the context admits otherwise:

AG197498K



- (a) The singular includes the plural and vice versa
- (b) A reference to a gender includes a reference to each other gender
- (c) A reference to a person includes a reference to a firm, corporation or other corporate body and that persons successors in law
- (d) If a party consists of more than one person this Agreement binds them jointly and each of them severally
- (e) A term used in this Agreement has its ordinary meaning unless that term is defined in this Agreement, If a term is not defined in this Agreement and it is defined in the Act it has the meaning as defined in the Act
- (f) A reference to an Act, Regulations or the Scheme includes any Acts, Regulations or amendments amending consolidating or replacing the Act, Regulation or Scheme.
- (g) The introductory clauses to this Agreement are and will be deemed to form part of this Agreement
- (h) The obligations of the Owner under this Agreement will take effect as separate and several covenants which are annexed to and run at law and equity with the Land provided that if the Land is subdivided, this Agreement must be read and applied so that each subsequent owner of a lot is only responsible for those covenants and obligations which relate to that owners lots

12. Ending of Agreement

This Agreement ends only after the completion of the works described in clause (2) (1) (b) and when Council issues a written notice to the Owner stating that Council has been advised by South East Water that odour emissions from the Plant no longer represent an unreasonable risk to the amenity of the Land

This Agreement ends if Amendment C60 to the Scheme is not approved

13. Application to Register of Titles

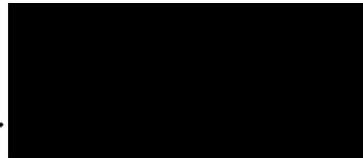
As soon as reasonably practicable after the Agreement has ended, Council will, at the request and at the cost of the Owner make application to the Register of Titles under Section 183(2) of the Act to cancel the recording of this Agreement on the register.

In witness whereof the parties have set their hands and seals the day and year set out above.

Signed, sealed and delivered by
[REDACTED] in the
presence of [REDACTED]

Witness

)
)
)..



AG197498K

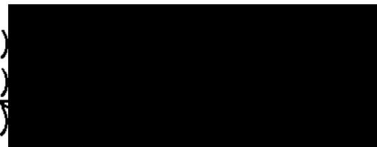
18/11/2008 \$104.90 173



Signed, sealed and delivered by
[REDACTED]

Witness

)
)
)..



Signed, sealed and delivered by
[REDACTED]

)
)
)..



Signed by and on behalf, and
with the authority of the Cardinia
Shire Council by John Holland
(Manager of Strategic Planning),
in the exercise of power
conferred by an Instrument of
Delegation

)
)
)
)
)
)
)



In the presence of:



Witness

PROSSOR

TOWN PLANNING

Planning Submission

6 Link Road, Lang Lang

www.prossortownplanning.com.au

	Planning Report
Address	6 Link Road, Lang Lang
Proposal	Thirty four lot subdivision, subdivision of land adjacent to a road in Transport Zone 2 and associated works including vegetation removal.
Author(s)	[REDACTED] – Director, Prossor Town Planning
Author contact	[REDACTED]
Client	Job Site Recyclers
Council	Cardinia Shire Council
Date	March 2023

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Contents

1. Introduction
2. Land Context – Subject Site and Surrounds
3. The Proposal
4. Planning Scheme Assessment
5. Conclusion

1. Introduction

This application proposes a thirty four lot subdivision, subdivision of land adjacent to a road in Transport Zone 2 and associated works, including vegetation removal. Proposed Lot 'A' will be set aside/remain vacant, which adjoins residential land. A 12m-wide drainage reserve is also proposed, to be vested to Council, adjoining the eastern boundary of proposed Lot 15.

The site is located within the Industrial 1 Zone under the Cardinia Planning Scheme and is affected by the following Overlay controls:

- Clause 43.04 – Development Plan Overlay, Schedule 14 (DPO14)
- Clause 44.04 – Land Subject to Inundation Overlay (LSIO)
- Clause 45.04 – Road Closure Overlay (RCO)

A Planning Permit is required under the following provisions:

- Clause 33.01-3 and 33.02-4 (IN1Z) subdivision of land and associated works
- Clause 44.04-3 (LSIO) – Subdivision of land
- Clause 52.02 – Creation of a reserve
- Clause 52.17- Native Vegetation
- Clause 52.29-2 - Subdivide land adjacent to a TZ2

After reviewing the provisions of the Cardinia Planning Scheme and inspecting the site and surrounds it has been identified that the following key issues need to be addressed when deciding on the application:

- Is the subdivision layout consistent with the long term objectives of the IN1Z?
- Is the subdivision consistent with the LSIO?
- Are there any environmental impacts?
- Is the proposal consistent with the Planning Policy Framework and Local Planning Policy Framework?

This report aims to address these questions and demonstrate that the proposal should receive Council's full support on the basis that it is consistent with the intention of the IN1Z and it will not compromise future land use or development in this area. Off-site amenity impacts can be suitably managed and the proposal will result in a sustainable contribution to the Cardinia area.

2. Site Context

2.1 Location

The site is located on the southern side of Westernport Road, Lang Lang, approximately 650 metres east of the South Gippsland Highway.

Broadly speaking, the surrounding area along South Gippsland Highway is used and developed for rural purposes within the Green Wedge Zone and Rural Conservation Zone, including single dwelling rural lots, as well as some commercial use. The South East Water Treatment Plan directly adjoins the subject site to the west. To the east, is the main town centre of Lang Lang, which encompasses residential land, schools, public parks and a commercial shopping strip.

Westernport Road is part of the arterial road network (TZ2) which runs in a north-east to south-west direction, connecting South Gippsland Highway to the west to the township of Drouin South to the east, approximately 26km from the subject site.

An aerial image of the site and surrounding locality is provided below:

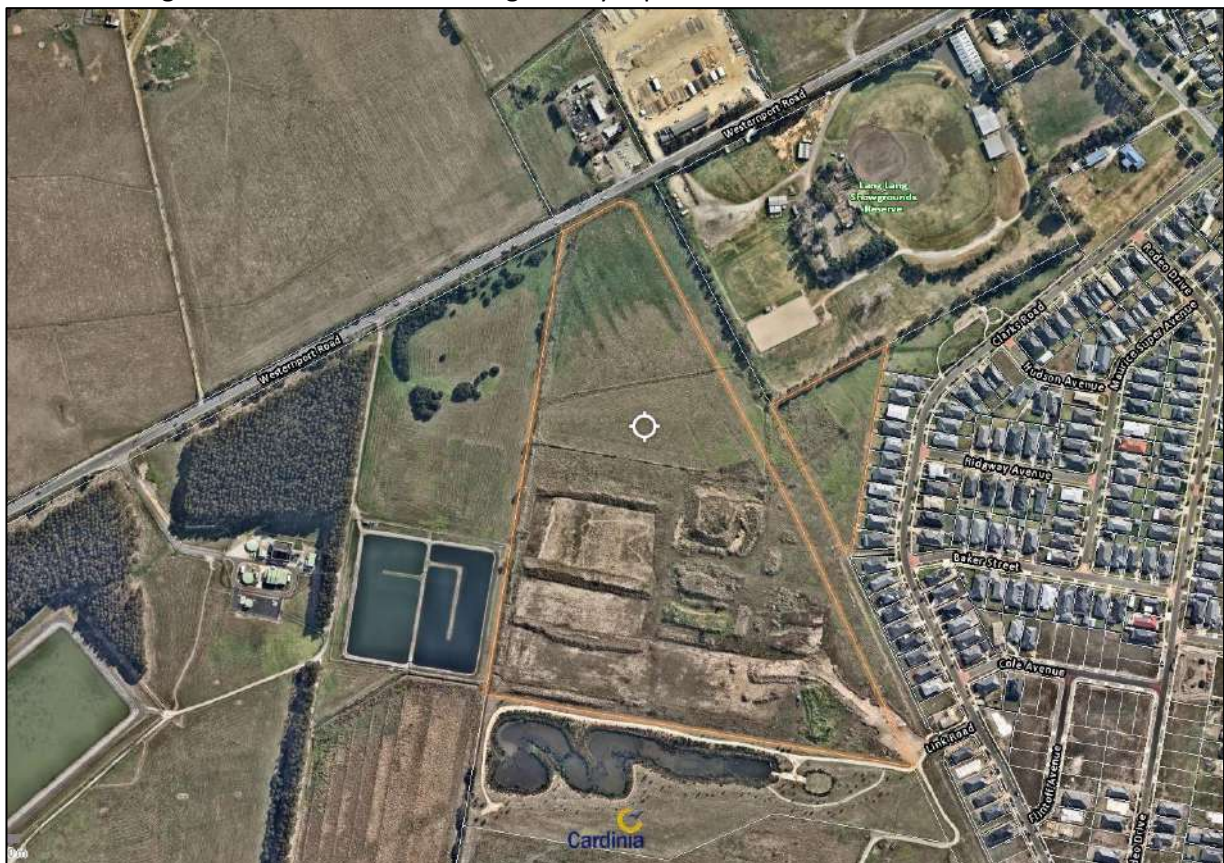


Fig 1: Aerial image of the subject site and surrounds (source: <https://cardinia.pozi.com/>)

2.2 Existing Land Use & Development and Adjoining Land

The subject site is located on the southern side of Westernport Road, and currently gains access from Link Road to the south which extends off Clarks Road within a residential area. The site is irregular in shape, and is split into two parts separated by an unmade road. The larger part of the lot which is proposed to be subdivided, has a frontage of 66.54 metres to Westernport Road, and depth of 360 metres with a total area of 13.70 hectares. The smaller part located on the eastern side of the unmade road, directly adjoins residential land to the south-east and has an area of 1.22 hectares. The total area of the subject site is 14.92 hectares.

The site is currently vacant and is devoid of any significant vegetation. Some temporary fill has been placed on the land; however, the general topography is relatively level. Post and wire fencing borders title boundaries.

The following photos depict the subject site and surrounding area:

Image 1: Subject site, Westernport Road streetscape elevation



Image 2: Facing north, standing on Link Road



Image 3: Standing at subject site entrance on Link Road, facing south-west



Image 4: Southern boundary of subject site, adjoining public reserve with footpath and wetland



Image 5: Subject site



Image 6: Facing south towards residential area



Image 7: Southern boundary interface between subject site and public reserve containing a footpath and wetland



Image 8: Public reserve, 4 Link Road



Image 9: Eastern boundary interface between subject site and 30 Westernport Road



Image 10: Adjoining site to the east, 30 Westernport Road, South East Water Treatment Plant



Image 11: Subject site, facing east



Image 12: Subject site, southern boundary



Image 13: Eastern boundary of subject site, facing north-west



Image 14: Adjoining residential land along Clarks Road



Image 15: 30 Westernport Road, South East Water Treatment Plant



Image 16: Adjoining public reserve (showgrounds) to the east



Image 17: Location of proposed road adjoining Westernport Road



Image 18: Opposite subject site on Westernport Road



Image 19: View east along Westernport Road



Image 20: View west along Westernport Road



2.4 Easements, restrictions & covenants

The property is known as:

- Lot 1 on Plan of Subdivision 820562H.

An 8.27-metre-wide drainage reserve is located at the southern corner of the smaller part of the lot, whereby the remaining extent of land is not encumbered by any further easements. A 5.166ha drainage reserve abuts the full length of southern boundary of the subject site.

A Section 173 Agreement is registered on title (AG198498K). The Agreement was created from a planning scheme amendment process (ref: C60) whereby the original land parcel was rezoned from Farming Zone to part Residential 1 Zone and part Industrial 1 Zone, with a Design and Development Plan Overlay, Schedule 14 (DPO14) applied and a Road Closure Overlay applied to part of Clarks Road.

The Agreement covenants certain acknowledgements, and requires that the 'Owner' subdivides and develops the land in accordance with the staging plan approved by Council and South East Water. Clause 2 (3) of the Agreement includes a consent mechanism, which reads as follows:

2 (3) Except with the prior written consent of Council, subdivision and development of the Land must only be conducted in accordance with the staging plan approved pursuant to Clause 2 (2)

Given the above consent mechanism, we submit that Council can consider the proposed subdivision and development of land as proposed in this application. The proposal does not conflict or contradict any requirement or obligation of the Agreement.

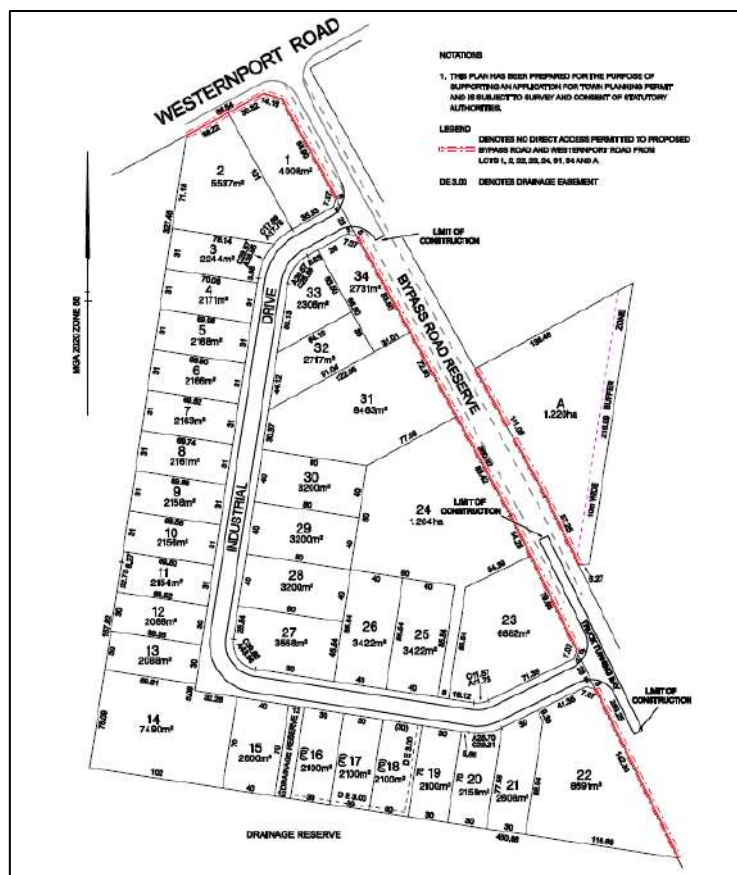
3. The Proposal

Approval is sought for a thirty four lot subdivision which adjoins a Transport 2 Zone and creation of a drainage reserve. An internal road is proposed adjoining the future road to be constructed east of the site.

Proposed Lots 1-13 are positioned on the western side of Industrial Drive and range in-between 2,088 square metres to 5537 square metres in size. Lot 14 is positioned at the south-west corner, with larger Lots positioned along the southern boundary ranging between 2100square metres to 8691 square meters (Lot 22) Existing Lot 'A' on the opposite side of the road is to remain. Lots 23 to 34 are centrally located and range from 2306 square meters to 1.2ha. The proposed drainage reserve to be vested to Council is 12 metres wide positioned between Lots 15 and 16.

There is some minor native vegetation removal proposed to facilitate the development and subdivision. The submitted Flora and Fauna Assessment demonstrates that the proposal bears minimal impact upon the environmental and ecological values of the site and surrounding area.

The image details the proposed subdivision layout.



4. Planning Scheme Assessment

4.1 Planning Policy Framework

Clause 12.01-1S – Protection of biodiversity

Objective: *To protect and enhance Victoria's biodiversity.*

Minimal vegetation removal is required to accommodate the proposed subdivision. The submitted Flora and Fauna Assessment demonstrates that the proposal bears minimal impact upon the biodiversity values of the area and ecological systems.

Clause 12.01-2S – Native vegetation management

Objective: *To ensure that there is no net loss to biodiversity as a result of the removal, destruction or lopping of native vegetation.*

There is limited native vegetation removal required to accommodate the proposed subdivision. The proposed size of each lot within the subdivision allows for both development opportunity and landscaping with vegetation removal minimised where possible through a responsive subdivision design.

Clause 13.03-1S – Floodplain management

Objective: *To assist the protection of:*

- *Life, property and community infrastructure from flood hazard, including coastal inundation, riverine and overland flows.*
- *The natural flood carrying capacity of rivers, streams and floodways.*
- *The flood storage function of floodplains and waterways.*
- *Floodplain areas of environmental significance or of importance to river, wetland or coastal health.*

The proposed buildings and works are not located within the area affected by the LSIO. Future development will be able to manage flood impact subject to meeting relevant requirements as related to matters such as finished floor level and stormwater management.

Clause 13.07-1S – Land Use Capability

Objective: *To protect community amenity, human health and safety while facilitating appropriate commercial, industrial, infrastructure or other uses with potential adverse off-site impacts.*

The original land parcel which includes the subject site, previously underwent a re-zoning process via scheme amendment C60 which changed the zone from Farming Zone to both Industrial and Residential Zone. Therefore, a variety of commercial and industrial land uses can be expected within this area. The proposed subdivision has been designed to take into consideration in the nearby residential uses with the future road providing a buffer and the lot sizes providing opportunity for a balanced response with landscaping and built form. Any future proposed land use which requires a

planning permit will be required to demonstrate compliance with relevant offsite impact objectives such as noise or air quality.

Clause 19.03-3S – Integrated Water Management

Objective: *To sustainably manage water supply, water resources, wastewater, drainage and stormwater through an integrated water management approach.*

The proposal is consistent with this provision as demonstrated in the storm water management plan submitted with the application. In accordance with Clause 66.03, it's expected that the application will be referred to the relevant authorities (South-East Water and Melbourne Water) who will impose requirements for the subdivision. Each lot will have suitable stormwater and sewerage connections.

4.2 Local Planning Policy

Clause 21.02-3 – Biodiversity

Objectives:

- *To achieve no net loss in the quantity and quality of native vegetation in the municipality.*
- *To maintain and enhance the diversity of indigenous habitats and species.*
- *To reduce the spread and extent of pest plants and animals.*

There is limited vegetation removal proposed in the application, and the submitted Flora and Fauna Assessment demonstrates that the proposal bears minimal impact upon the biodiversity and ecological features of the surrounding area.

Clause 21.02-4 – Bushfire

Objective: *To recognise that areas in the municipality are prone to bushfire and to minimise the potential risk to life, property and the environment.*

The subject site is not located within a Bushfire Management Overlay, however is within a Bushfire Prone Area. Subsequently, relevant bushfire mitigation measures will be addressed at the Building Permit stage for new development. The site adjoins the arterial road network and is easily accessible.

Clause 21.04-4 – Industry

Objectives: *To develop manufacturing and service industries that provide services to local residents and businesses, support local employment and reflect a high standard of urban design.*

The proposal will contribute to an increased availability of commercial and industrial land uses in this area which contributes to the local economy and commercial viability of this township. A range of lot sizes are incorporated into the subdivision design, offering a range of potential industrial or industry-related land uses.

Clause 21.08-1 – Lang Lang

This policy requires consideration of the *Lang Lang Township Strategy, July 2009* (the Strategy), whereby proposed use and development within or around the Lang Lang township is generally consistent with the Strategy and accompanying Lang Lang Framework Plan.

The subject site is located within Precinct 7 - 'Potential Industrial/Mixed Use Land', whereby the land has already been rezoned for industrial purposes consistent with the plan. The proposed subdivision is consistent with the Strategy, and support the long-term economic sustainability of the town as well as increase local employment opportunities.

4.3 Zone

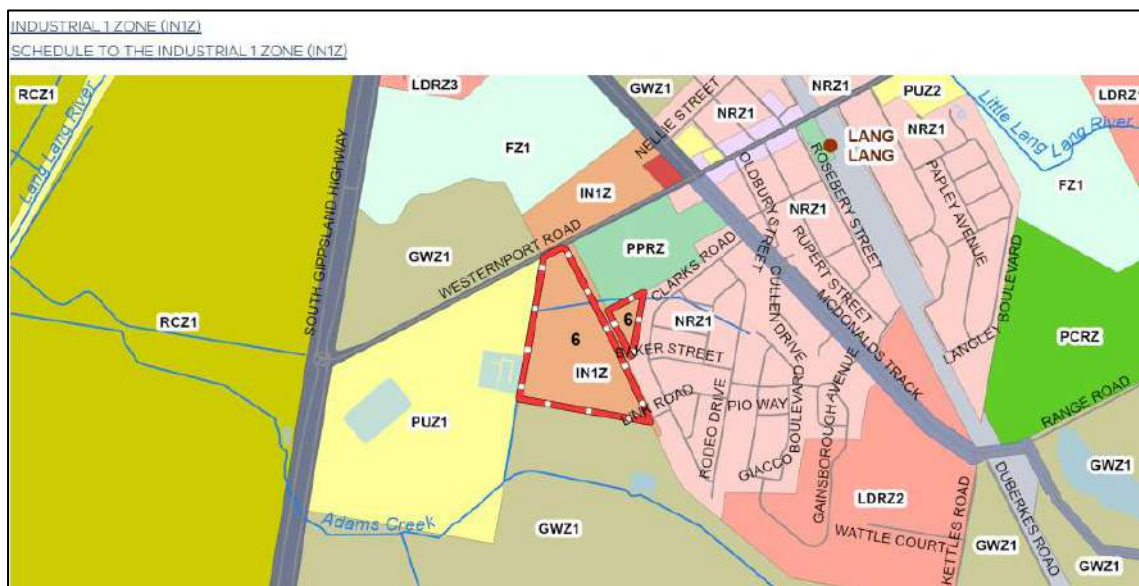


Fig 2: IN1Z mapping – source <https://mapshare.vic.gov.au/vicplan/>

Purpose:

- To implement the Municipal Planning Strategy and the Planning Policy Framework.
- To provide for manufacturing industry, the storage and distribution of goods and associated uses in a manner which does not affect the safety and amenity of local communities.

Pursuant to Clause 33.01-3, a planning permit is required for the subdivision of land. Pursuant to Clause 33.01-4, a planning permit is required for works.

Having regard to the purpose and decision guidelines of the Zone, the proposal is appropriate as follows:

- The site is adjacent to Westernport Road and within close proximity to the South Gippsland Highway which is a major road network and subject to high volumes of vehicle movement. To minimise any impacts to the arterial traffic network, access to the site is proposed via an

internal road which will connect to the existing (unmade) road along the north-east boundary of the site. A planning permit (T220461PA) has been issued for a temporary crossover application located directly abutting Westernport Road (TZ2), to enable maintenance vehicles to access the property rather than using the residential road (McDonalds Track). This crossover will not remain once the subdivision works have been completed and the new access road constructed.

- Vehicle movement to and from the site is efficient and each lot can accommodate future parking.
- The proposed subdivision layout will allow for multiple commercial/industrial uses in the future. Each lot has suitable vehicle access with each lot area easily able to accommodate future development, carparking and loading areas. In accordance with Clause 66.03, the application is required to be referred to Melbourne Water, APA, SP Ausnet and South-East Water for comment.

4.4 Overlay Controls

Clause 43.04 – Development Plan Overlay, Schedule 14

The schedule to the overlay states that a planning permit may be granted to use land, construct a building or construct or carry out works before a development plan has been approved to the satisfaction of the responsible authority.

It is noted that Schedule 14 expired on 26 January 2014. We submit that the overlay has no bearing on the consideration of the application.

Clause 44.01 – Land Subject to Inundation Overlay

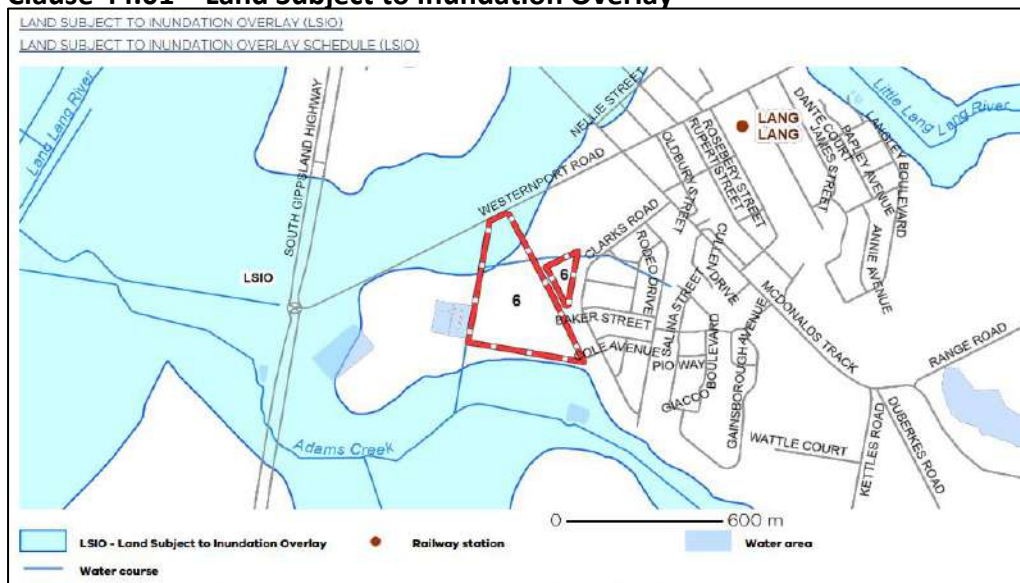


Fig 4: LSIO mapping – source <https://mapshare.vic.gov.au/vicplan/>

Purpose:

- *To implement the Municipal Planning Strategy and the Planning Policy Framework.*
- *To identify flood prone land in a riverine or coastal area affected by the 1 in 100 (1 per cent Annual Exceedance Probability) year flood or any other area determined by the floodplain management authority.*
- *To ensure that development maintains the free passage and temporary storage of floodwaters, minimises flood damage, responds to the flood hazard and local drainage conditions and will not cause any significant rise in flood level or flow velocity.*
- *To minimise the potential flood risk to life, health and safety associated with development.*
- *To reflect a declaration under Division 4 of Part 10 of the Water Act, 1989.*
- *To protect water quality and waterways as natural resources by managing urban stormwater, protecting water supply catchment areas, and managing saline discharges to minimise the risks to the environmental quality of water and groundwater.*
- *To ensure that development maintains or improves river, marine, coastal and wetland health, waterway protection and floodplain health.*

Pursuant to Clause 44.04-3, a planning permit is required to subdivide land. It is anticipated that the application will be referred to Melbourne Water for comment pursuant to Section 55 of the *Planning and Environment Act 1987*.

The proposed development is not located within the area affected by LSIO. Proposed lots located within the area affected by the LSIO can be developed according to relevant standards and requirements as related to mitigating flood impact such as raised floor levels, transparent fencing etc.

4.5 Particular Provisions

Clause 52.02 – Easements, restrictions and reserves

Purpose:

- *To enable the removal and variation of an easement or restrictions to enable a use or development that complies with the planning scheme after the interests of affected people are considered.*

Pursuant to Clause 52.02, a planning permit is required to create a reserve.

The proposed 12-metre-wide drainage reserve as shown on the proposed plan of subdivision will be vested to Council upon the issuing of SOC. It's expected the application will be referred to Council's Development Engineering department for comment.

Clause 52.17 – Native Vegetation

Purpose:

- *To ensure that there is no net loss to biodiversity as a result of the removal, destruction or lopping of native vegetation. This is achieved by applying the following three step approach in accordance with the Guidelines for the removal, destruction or lopping of native vegetation (Department of Environment, Land, Water and Planning, 2017) (the Guidelines):*
- *1. Avoid the removal, destruction or lopping of native vegetation.*
- *2. Minimise impacts from the removal, destruction or lopping of native vegetation that cannot be avoided.*
- *3. Provide an offset to compensate for the biodiversity impact if a permit is granted to remove, destroy or lop native vegetation.*
- *To manage the removal, destruction or lopping of native vegetation to minimise land and water degradation.*

As detailed in the submitted Environmental Impact Assessment, the site predominantly consists of pastoral grasses, weeds and highly disturbed patches of native vegetation.

The subdivision design has attempted to avoid and minimise the loss of vegetation by placing the larger patch within a larger allotment providing opportunity for responsive design solutions. The loss of smaller areas of vegetation cannot be avoided.

The site is within the Intermediate Assessment Pathway and given the small amount of native vegetation growing on site, a Habitat Hectare assessment is not required.

The proposal involves the removal of 0.208 hectares of native vegetation requiring an offset of 0.072 General Habitat Units

Clause 52.29 – Land adjacent to the principal road network

Purpose:

- *To ensure appropriate access to the Principal Road Network or land planned to form part of the Principal Road Network.*
- *To ensure appropriate subdivision of land adjacent to Principal Road Network or land planned to form part of the Principal Road Network.*

Pursuant to Clause 52.29-2, a planning permit is required to subdivide land adjacent to a T22.

The site adjoins Westernport Road which is included in Transport Zone 2. As previously discussed, the proposed internal road will be accessed via an existing road (unmade) which will allow for vehicles to enter and exit the site within causing any undue impact upon the traffic movements along the arterial road network. It's expected the application will be referred to the Department of Transport for comment.

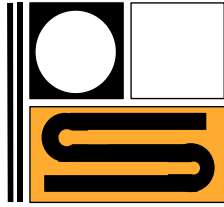
Clause 53.01 – Public Open Space Contributions and Subdivisions

Under this provision, for the proposed subdivision, a public open space contribution is required to be made to Council unless otherwise specified. The schedule does not specify a particular rate for the site, therefore deferring to the *Subdivision Act 1988*.

5. Conclusion

On balance the proposal is consistent with the relevant provisions and policies of the Cardinia Planning Scheme and should receive Council's full support as:

- The proposed subdivision allows for a variety of uses and development in the future with land allocated for road reserves and public open space.
- The proposal avoids and minimises the removal of native vegetation
- On balance the proposal is worthy of support and we look forward to a positive outcome in due course.



Mail: PO Box 151, Hastings, 3915
Telephone: (03) 5979 5000
Email: reception@speedies.com.au

Speedie Development Consultants Pty. Ltd.

INCORPORATED IN VICTORIA A.B.N. 61 982 117 453

SURVEYORS, ENGINEERS, PLANNERS AND DEVELOPMENT CONSULTANTS

Our Ref: 12990

24th October 2023

The Chief Executive Officer
Cardinia Shire Council
PO Box 7
PAKENHAM VIC 3810

Dear Sir,

We refer to Council's RFI of 16th June 2023 for the subdivision of the industrial property at 6 Link Road, Lang Lang.

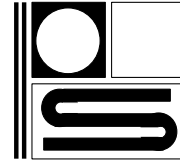
The additional fee payment of \$592.50 is to be paid today, and an application for the amendment of this permit application has been submitted.

We further attach: -

1. Amended concept plan of two-sheets showing:
 - a) Lot 24 - increased width of access driveway to 9 metres, splay corners for the access driveway to this lot and truck turning template for entry to this lot. Our client intends to retain this lot and will later apply for planning permission to construct storage units on this lot, with storage units not requiring integration with the street and are better placed in a lot of this configuration/location at the rear of an access driveway.
 - b) Retaining wall to be constructed along the southern boundary being an interface with the southern open-space / wet land.
 - c) 1 in 4 temporary batters along the western and bypass road boundaries where alternative treatments such as retaining walls could be constructed upon the future development of the respective lots.
 - d) Access to lot A at the southern part of lot A from the proposed constructed part of the bypass road, noting that alternative access to lot A could be provided/permitted when the bypass road is fully constructed.
2. Amended plan of subdivision of five sheets showing: -
 - a) Native vegetation to be removed with the description/location of the native vegetation being derived from the previously submitted environmental impact assessment



Liability limited by a scheme
approved under Professional
Standards Legislation



- b) The location of trees along the western boundary and eastern side of the bypass road and their respective tree protection zones
- c) The extent of the tree protection zones within the bypass road reserve and on sheet 2, preliminary road design cross-sections which demonstrate that the proposed bypass road construction is outside the tree protection zone.

3. Arborist Report

The report addresses the vegetation referred to above and does also note –

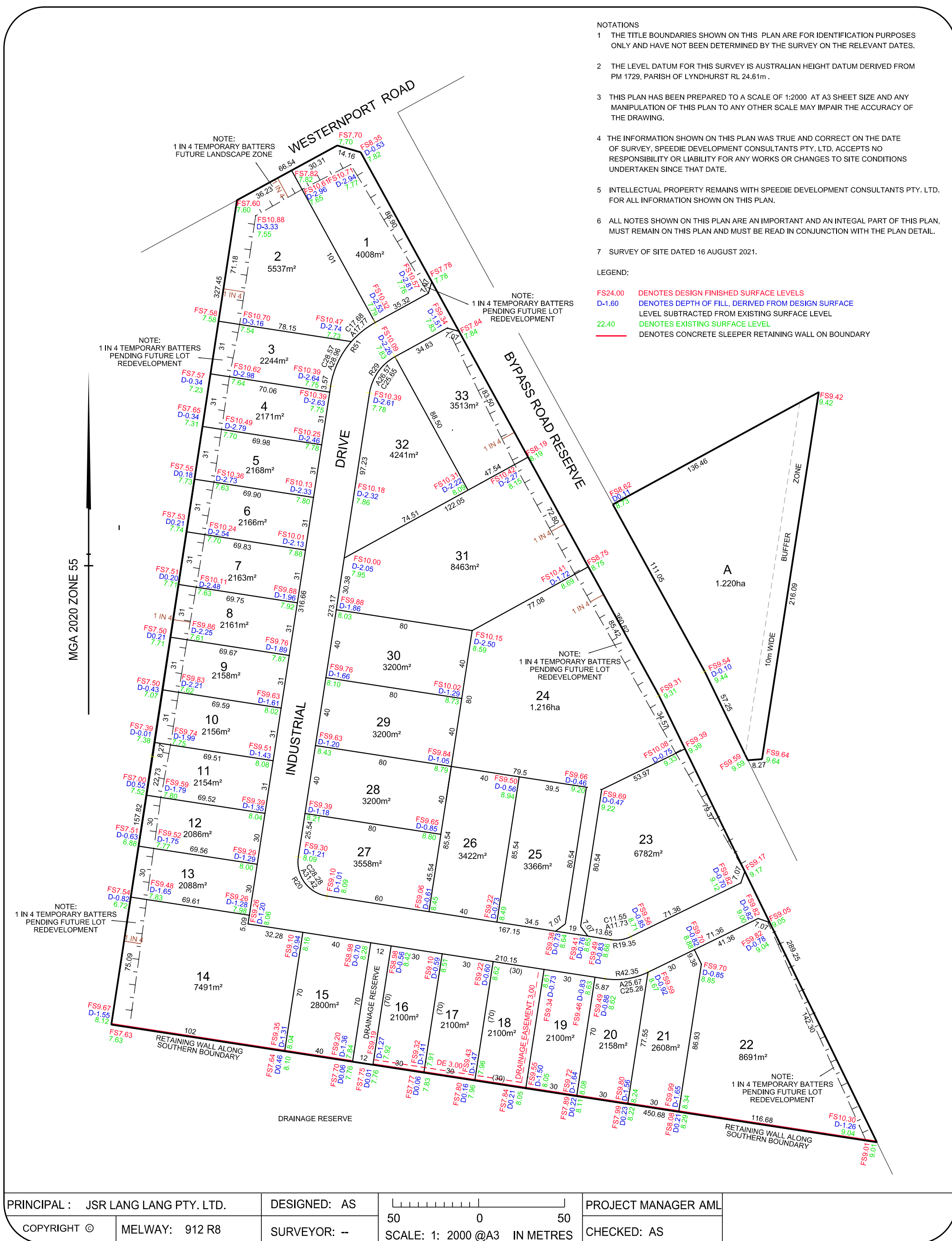
*“Pursuant to clause 52.17 of the Victorian planning scheme, a permit and associated offset credits are required to remove vegetation that is native to Victoria. Trees **132, 134, 136 – 143, 148 – 152, 154, 155** and patches **F, G, H, I** are the only trees assessed within the subject site that are native to Victoria; all other trees are either dead (<40cm DBH), less than 10 years old, or not native to Australia. Grasses and understorey vegetation within the site that may be subject to this clause were not investigated for the purposes of this report. Native vegetation which satisfies the criteria for bushfire exemptions can be removed without a native vegetation permit or offset”.*

The subdivision design including the smaller lots along the western boundary was undertaken after industrial land marketing research in both Lang Lang and nearby townships which demonstrated a need for this general lot size which has been confirmed by our client having prospective sales on lots 3 to 13 and attached are plans of two separate industrial estates within the Cardinia Shire which show similar and smaller lot sizes.


Please contact this office if you wish to further discuss this matter.


Yours faithfully,
Speedie Development Consultants Pty Ltd

A. M. Lovelock

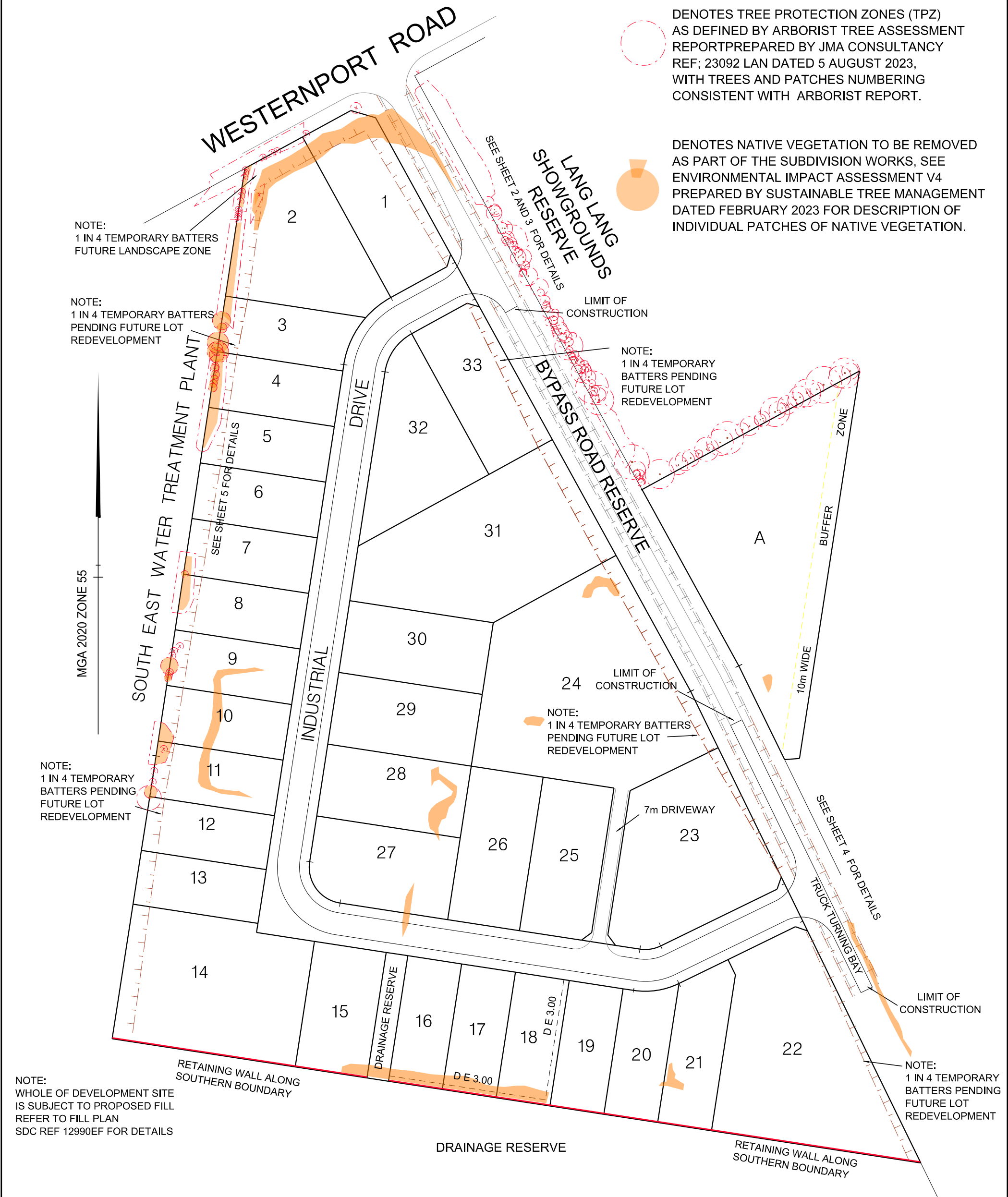


LEGEND

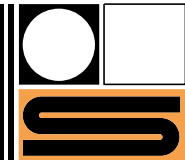
- 

DENOTES TREE PROTECTION ZONES (TPZ)
AS DEFINED BY ARBORIST TREE ASSESSMENT
REPORT PREPARED BY JMA CONSULTANCY
REF; 23092 LAN DATED 5 AUGUST 2023,
WITH TREES AND PATCHES NUMBERING
CONSISTENT WITH ARBORIST REPORT.
- 

DENOTES NATIVE VEGETATION TO BE REMOVED
AS PART OF THE SUBDIVISION WORKS, SEE
ENVIRONMENTAL IMPACT ASSESSMENT V4
PREPARED BY SUSTAINABLE TREE MANAGEMENT
DATED FEBRUARY 2023 FOR DESCRIPTION OF
INDIVIDUAL PATCHES OF NATIVE VEGETATION.



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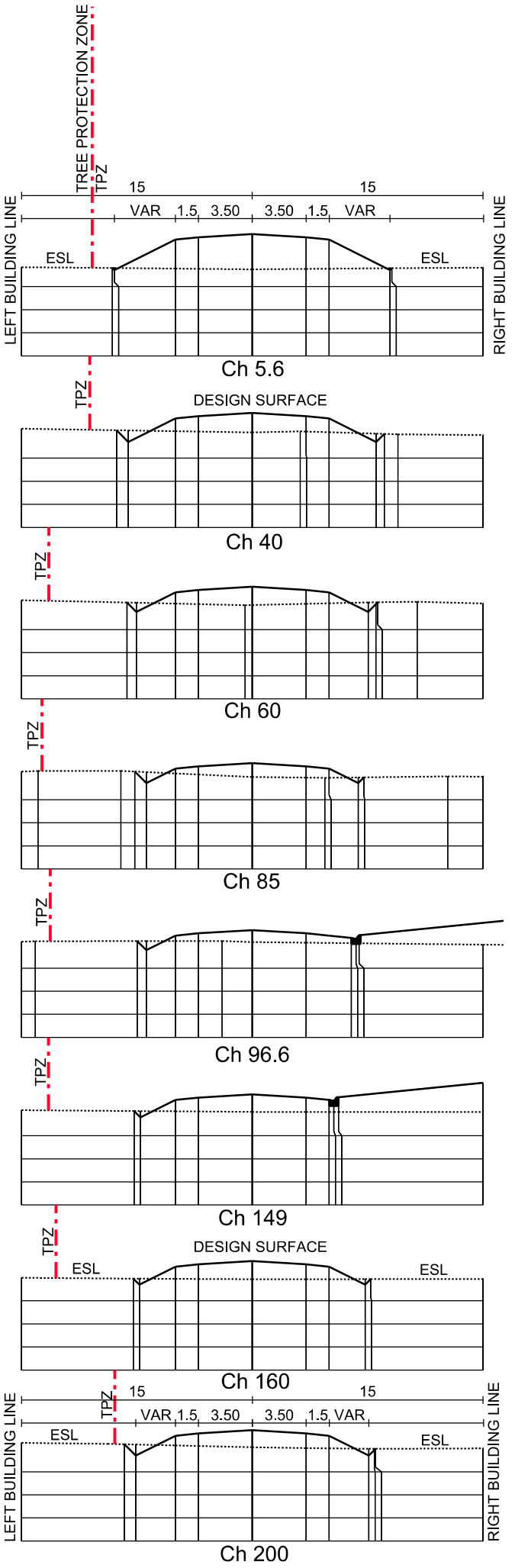
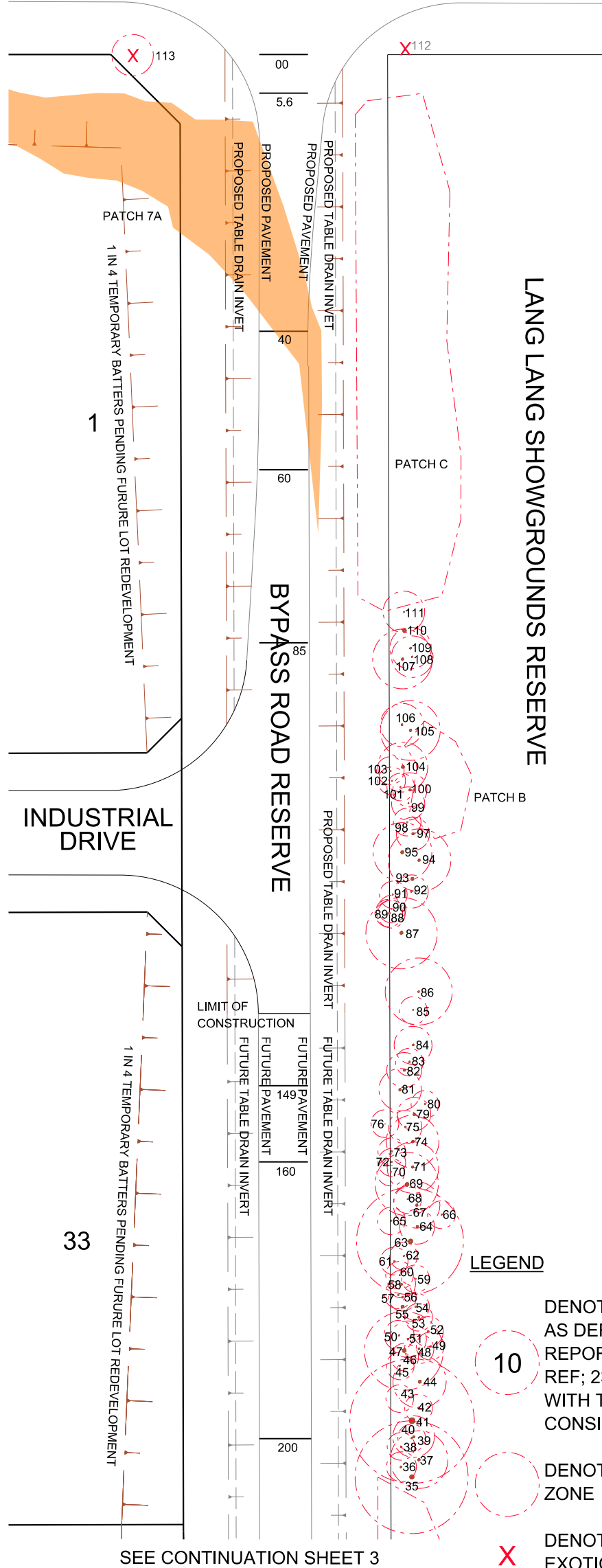


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55 Marine Parade, Hastings Vic 3915 Ph:(03)5979 5000
reception@speedies.com.au

PLAN OF SUBDIVISION
6 LINK ROAD
LANG LANG 3984

REF No. 12990EV
SHEET 1 OF 5
DATE: 28-11-2023
VERSION: 2

WESTERNPORT ROAD



LEGEND

- DENOTES TREE PROTECTION ZONES (TPZ) AS DEFINED BY ARBORIST TREE ASSESSMENT REPORT PREPARED BY JMA CONSULTANCY REF; 23092 LAN DATED 5 AUGUST 2023, WITH TREES AND PATCHES NUMBERING CONSISTENT WITH ARBORIST REPORT.
- DENOTES (TPZ) BUILDING EXCLUSION ZONE
- DENOTES TREE TO BE REMOVED, DEAD, EXOTIC, DAMAGED OR DISEASED REFER TO ARBORIST TREE ASSESSMENT REPORT.
- DENOTES NATIVE VEGETATION TO BE REMOVED AS PART OF THE SUBDIVISION WORKS, SEE ENVIRONMENTAL IMPACT ASSESSMENT V4 PREPARED BY SUSTAINABLE TREE MANAGEMENT DATED FEBRUARY 2023 FOR DESCRIPTION OF INDIVIDUAL PATCHES OF NATIVE VEGETATION.

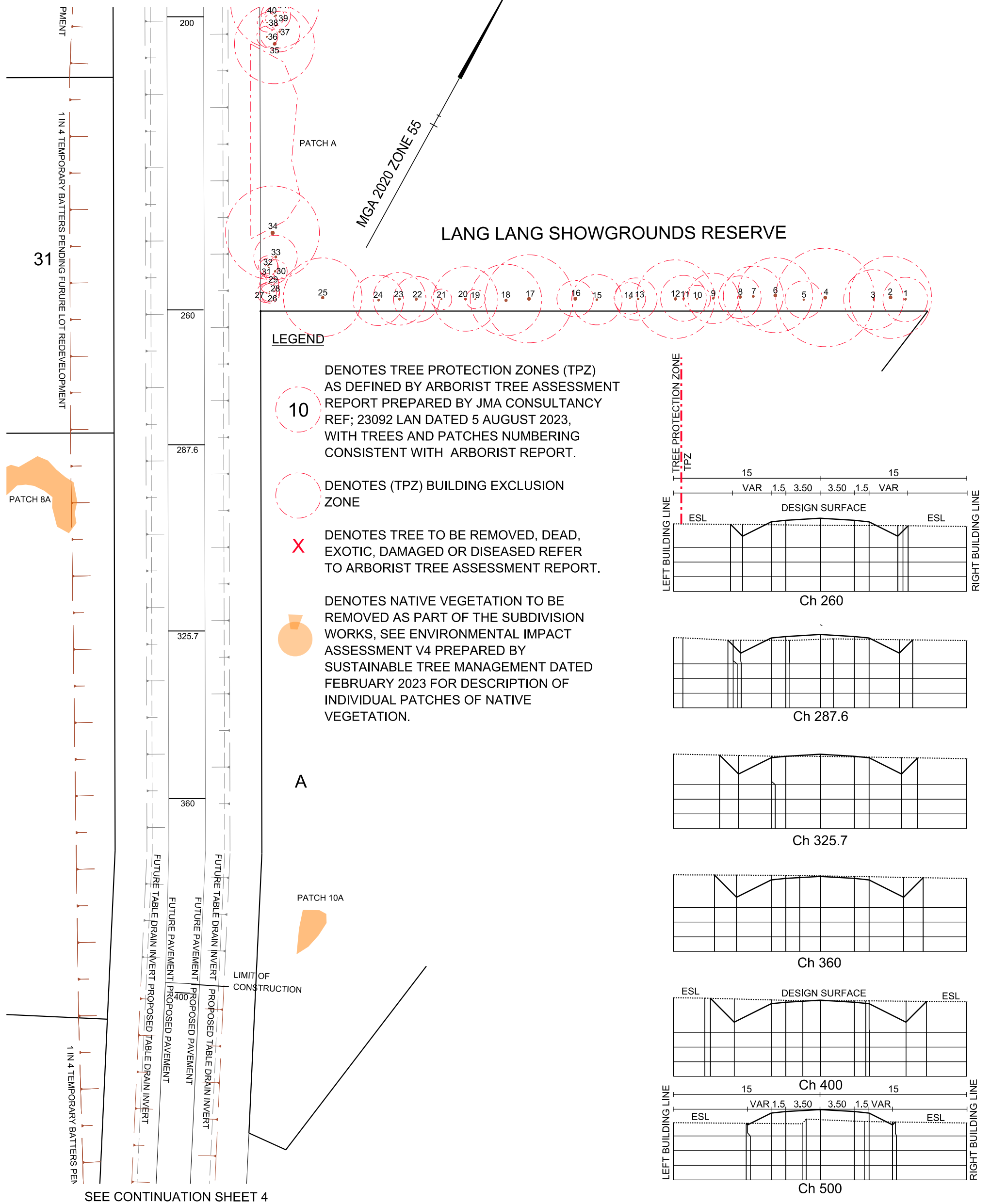
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reception@speedies.com.au


PROPOSED SUBDIVISION
6 LINK ROAD
LANG LANG 3984

REF No. 12990EV
SHEET 2 OF 5
DATE: 28-11-2023
VERSION: 2

EE CONTINUATION SHEET 4



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PROPOSED SUBDIVISION
6 LINK ROAD
LANG LANG 3984

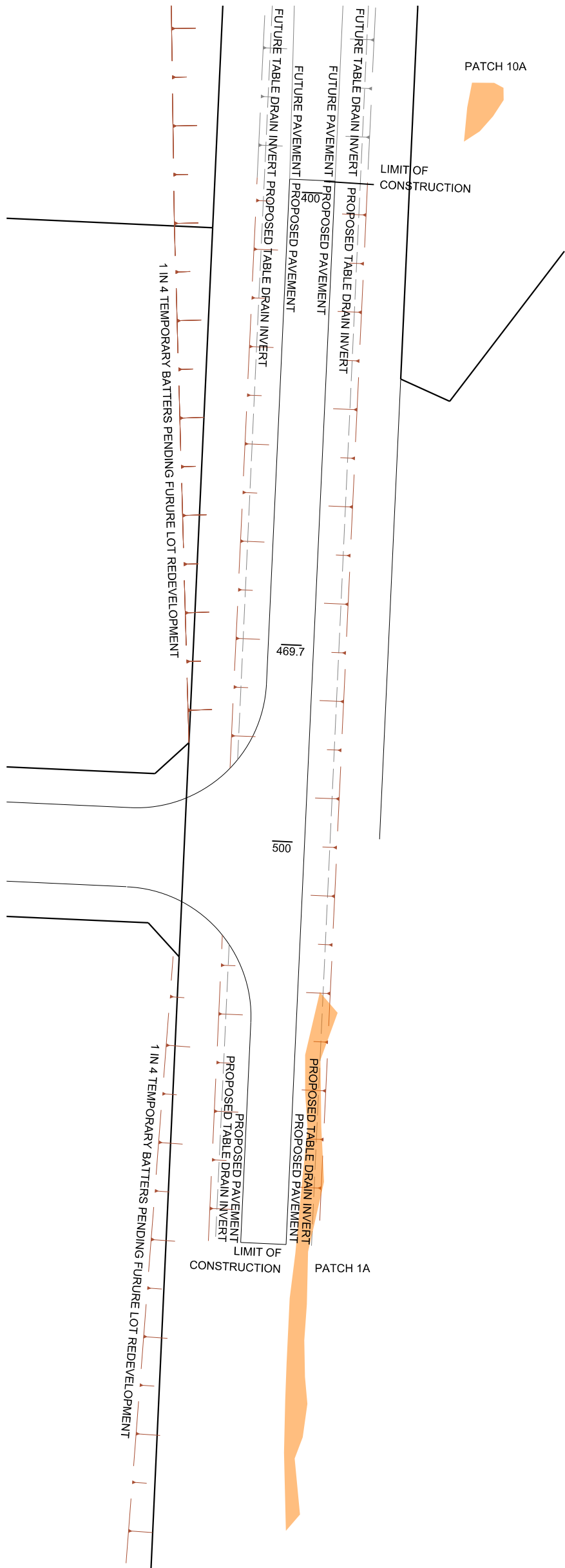
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SHEET 3 OF 5





DATE: 28-11-2023

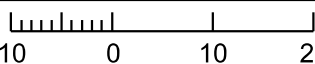
VERSION: 2

SEE CONTINUATION SHEET 3



LEGEND

-  DENOTES TREE PROTECTION ZONES (TPZ) AS DEFINED BY ARBORIST TREE ASSESSMENT REPORT PREPARED BY JMA CONSULTANCY REF; 23092 LAN DATED 5 AUGUST 2023, WITH TREES AND PATCHES NUMBERING CONSISTENT WITH ARBORIST REPORT.
-  DENOTES (TPZ) BUILDING EXCLUSION ZONE
-  DENOTES TREE TO BE REMOVED, DEAD, EXOTIC, DAMAGED OR DISEASED REFER TO ARBORIST TREE ASSESSMENT REPORT.
-  DENOTES NATIVE VEGETATION TO BE REMOVED AS PART OF THE SUBDIVISION WORKS, SEE ENVIRONMENTAL IMPACT ASSESSMENT V4 PREPARED BY SUSTAINABLE TREE MANAGEMENT DATED FEBRUARY 2023 FOR DESCRIPTION OF INDIVIDUAL PATCHES OF NATIVE VEGETATION.

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NOTATIONS

1. THIS PLAN HAS BEEN PREPARED FOR THE PURPOSE OF SUPPORTING AN APPLICATION FOR TOWN PLANNING PERMIT AND IS SUBJECT TO SURVEY AND CONSENT OF STATUTORY AUTHORITIES.

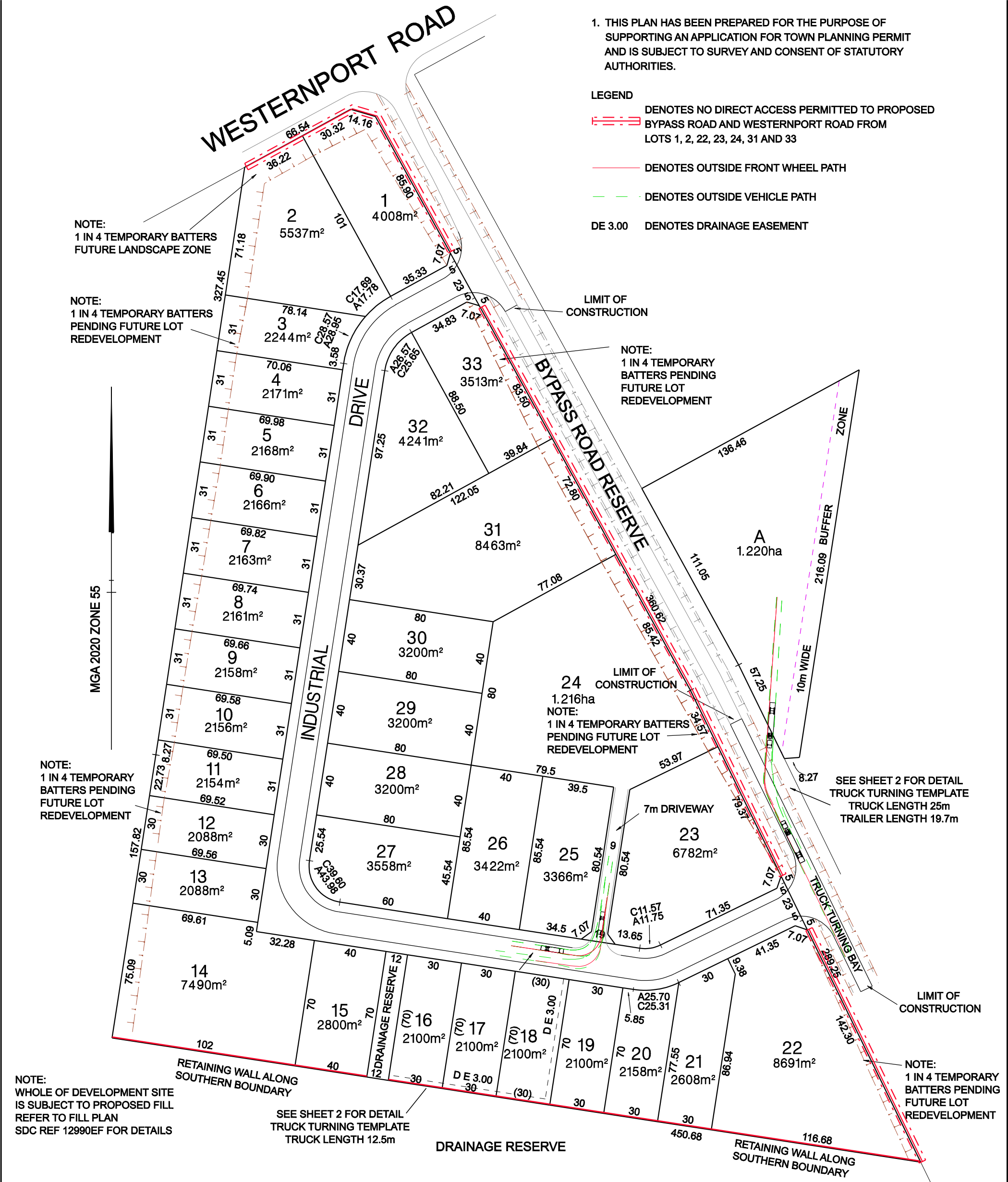
LEGEND

--- DENOTES NO DIRECT ACCESS PERMITTED TO PROPOSED BYPASS ROAD AND WESTERNPORT ROAD FROM LOTS 1, 2, 22, 23, 24, 31 AND 33

--- DENOTES OUTSIDE FRONT WHEEL PATH

--- DENOTES OUTSIDE VEHICLE PATH

DE 3.00 DENOTES DRAINAGE EASEMENT



PRINCIPAL : JSR LANG LANG PTY. LTD.

DESIGNED: AS

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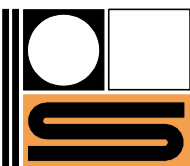
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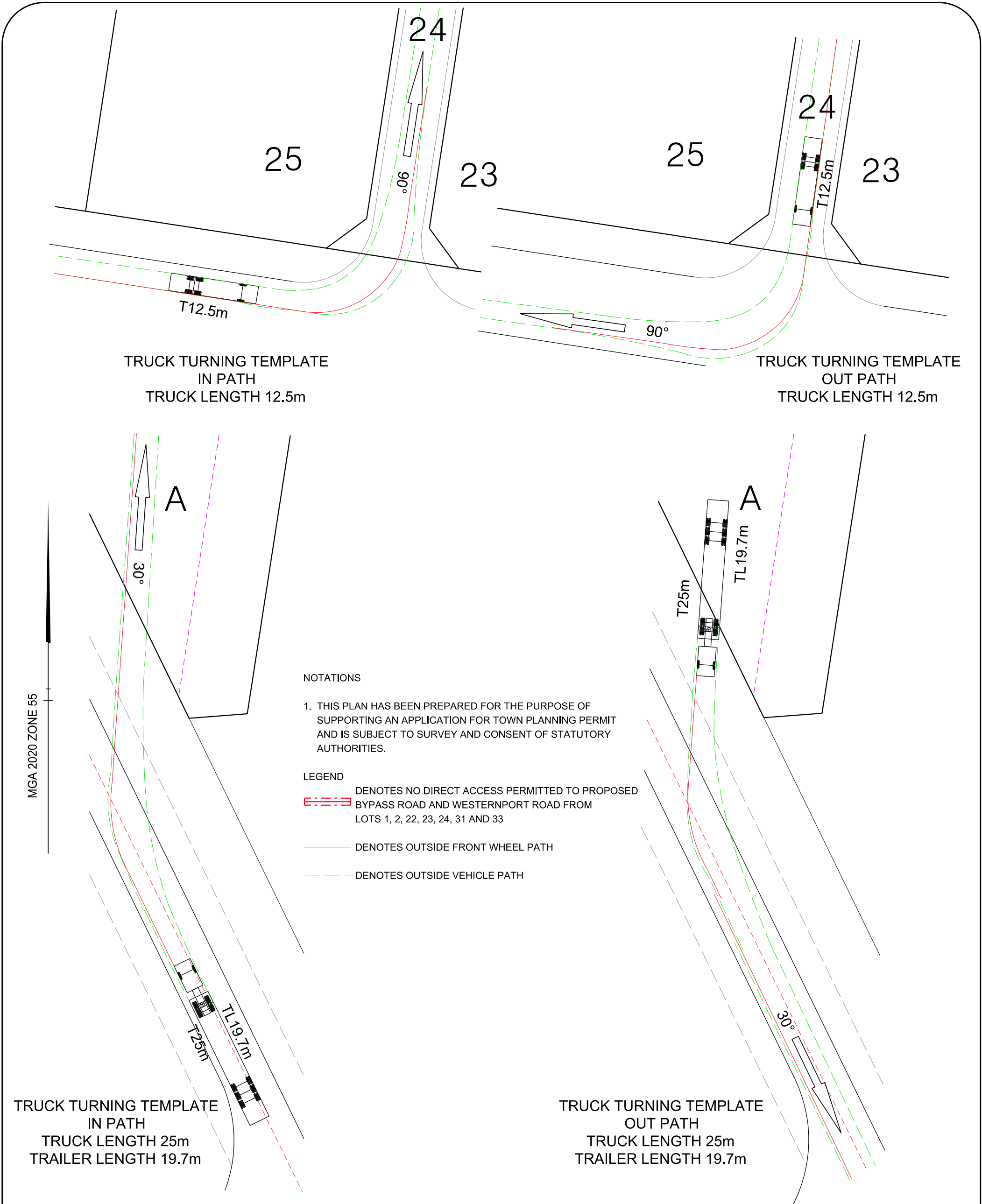
**CONCEPT PLAN
(INDUSTRIAL - IN1Z)
6 LINK ROAD
LANG LANG 3984**

REF No. 12990PB

SHEET 1 OF 2

DATE: 28-11-2023

VERSION: 3



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**Sustainable
Tree Management**

1/33 Colemans Road Carrum Downs Vic 3201

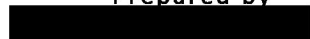
ENVIRONMENTAL IMPACT ASSESSMENT V4

Site address
6 Link Road, Lang Lang

Report prepared for
Prossor Town Planning



Prepared by



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Summary of Application Requirements under Intermediate Assessment Pathway

Table 1. Summary of application requirements for a Permit to remove native vegetation – Intermediate Assessment Pathway

No.	Application Requirement	Response
1	Information about the native vegetation to be removed, including: <ul style="list-style-type: none"> The assessment pathway and reason for the assessment pathway; Location category of the native vegetation to be removed; A description of the native vegetation to be removed; Maps showing the native vegetation and property in context; and The offset requirement that will apply if the native vegetation is approved to be removed. 	See Appendix I (NVR Report) Further information can be found within: Sections 5.1-5.3 Sections 5.7.1-5.7.2 Appendices A & G
2	Topographic and land information relating to the native vegetation to be removed, showing ridges, crests and hilltops, wetlands and waterways, slopes of more than 20 percent, drainage lines, low lying areas, saline discharge areas, and areas of existing erosion, as appropriate.	Details provided in Section 3 and maps located within: Appendices A and B
3	Recent dated photographs of the native vegetation to be removed.	See Appendix G
4	Details of any other native vegetation that was permitted to be removed on the same property with the same ownership as the native vegetation to be removed, where the removal occurred in the five-year period before the application to remove native vegetation is lodged.	The client is not aware of any permits or native vegetation removal previously carried out on site. All due diligence checks have been undertaken by Sustainable Tree Management to clarify.
5	An avoid and minimise statement. The statement describes any efforts to avoid the removal of and minimise the impacts on the biodiversity and other values of native vegetation, and how these efforts focused on areas of native vegetation that have the most value.	Section 7.3
6	A copy of any Property Vegetation Plan contained within an agreement made pursuant to section 69 of the Conservation, Forests and Lands Act 1987 that applies to the native vegetation to be removed.	Not applicable.
7	Where the removal of native vegetation is to create defensible space, a written statement explaining why the removal of native vegetation is necessary. This statement must have regard to other available bushfire risk mitigation measures. This statement is not required when the creation of defensible space is in conjunction with an application under the Bushfire Management Overlay.	Not applicable as the vegetation clearance is not for defensible space.
8	If the application is under Clause 52.16, a statement that explains how the proposal responds to the Native Vegetation Precinct Plan considerations at decision guideline 8.	Not applicable.
9	An offset statement providing evidence that an offset that meets the offset requirements for the native vegetation to be removed has been identified and can be secured in accordance with the Guidelines.	Section 7.4 Report of Available Native Vegetation Credits has been provided in Appendix J, and also as a separate document.

1. INTRODUCTION

Sustainable Tree Management was engaged by Jackie Prossor from Prossor Town Planning to prepare an Environmental Impact Assessment (EIA) to determine impacts to native vegetation growing within the subject site known as 6 Link Road, Lang Lang.

The subject site known as 6 Link Road, Lang Lang is located within an Industrial 1 Zone – Schedule to the Industrial Zone (IN1Z) of the Cardinia Shire Council. The proponent seeks to subdivide the existing land into thirty-five (35) individual allotments. The majority of the proposed allotments will measure less than 4,000m², however some allotments will be greater than 4,000m².

This Environmental Impact Assessment (EIA) is a formal assessment of the extent and condition of native vegetation within the study area, proposed for removal under the '*Guidelines for the removal, destruction or lopping of native vegetation*' (DELWP, 2020) from here on referred to as '*the Guidelines*'.

This EIA provides comments on implications under *the Guidelines*. Potential impacts on flora and fauna matters listed under the Victorian *Flora and Fauna Guarantee (FFG) Act 1988* and the Commonwealth *Environment Protection and Biodiversity Conservation (EPBC) Act 1999* have been considered as part of a review of existing information and field investigation.

2. SCOPE AND REPORT OBJECTIVES

Sustainable Tree Management was engaged by Jackie Prossor from Prossor Town Planning to prepare an EIA on native vegetation growing within the subject site known as 6 Link Road, Lang Lang.

Specifically, this investigation was commissioned to provide information on the extent and condition of native vegetation nominated for removal within the study area according to Victoria's Guidelines for the removal, destruction or lopping of native vegetation (DELWP, 2017). Potential impacts on flora and/or ecological communities listed under the Commonwealth Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) have also been addressed.

The scope of the investigation included:

- Review of existing information on the flora and native vegetation of the study area and surrounds, including:
 - Victorian Biodiversity Atlas administered by the Department of Environment, Land, Water and Planning (DELWP);
 - The Commonwealth Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) Protected Matters Search Tool; and
 - DELWP Native Vegetation Information Management system (NVIM).

- A site survey involving:
 - Characterisation and mapping of native vegetation on the site, as defined in Victoria's Guidelines for the removal, destruction or lopping of native vegetation (the 'Guidelines');
 - An overview of native vegetation growing within the study area, in accordance with the Guidelines, including a scattered tree assessment;
 - Compilation of a flora species list for the site; and
 - Assessment of the likelihood of occurrence of EPBC Act listed flora and vegetation communities on the site.

The technical aspects of this report are divided into the following sections:

Section 3	Provides background summarising the study area.
Section 4	Describes the sources of information, including the methods used for the field and desktop survey.
Section 5	Presents the assessment results, including details of the native vegetation and flora of the study area.
Section 6	Provides details of relevant biodiversity legislation and policy.
Section 7	Provides recommendations regarding best practice mitigation measures.
Section 8	Details the implications of the findings under the relevant legislation and policy.
Section 9	Provides a conclusion based upon the findings of the assessments.

3. STUDY AREA

The study area for this investigation is located at 6 Link Road, Lang Lang. The below Nearmap image, Figure 1, defines the study area and provides an aerial view of vegetation growing within and adjacent to the study area. The site is situated within the Cardinia Shire, 86km to the south east of Greater Melbourne, between Koo Wee Rup to the north east and Jam Jerrup to the south.



Figure 1. Aerial Nearmap imagery of site, dated 14th April, 2022.

The study area is within an Industrial 1 Zone – Schedule to the Industrial 1 Zone (IN1Z) within the Cardinia Shire Council (VicPlan, Planning Property Report, dated 4th August, 2022). Sections of the study area is surrounded by new residential development to the east and agricultural areas to the north, south and west. The Lang Lang Water Treatment Plant is located adjacent to the western boundary.

Most of the study area comprised introduced pasture grasses and environmental weeds. Several highly disturbed patches of native vegetation are scattered throughout the site assessment area.

Topographic Information

The natural topography of the land is generally flat, however several areas within the site are elevated due to past land use including man made stockpiles. Due to recent, heavy rainfalls, several lower-lying areas within the site were inundated with water. A watercourse is located adjacent to the western boundary and extends from the north to the south of the site, which connects to Adams Creek, south of the site. Further, a small, narrow drainage line exists within the proposed road location (future extension of Clarks Road).

4. METHODS

4.1. DESKTOP ASSESSMENT

Relevant literature, online resources and databases were reviewed during a thorough desktop assessment of the study area. The following information resources were viewed in preparation of this report:

- Aerial photography of the site (Nearmap, dated 14th April, 2022);
- Plan of Subdivision (Speedie Development Consultants, Ref: 12290S, undated);
- VicPlan Property Planning Report - (dated 4th August, 2022);
- Victorian Biodiversity Atlas (VBA);
- Visualising Victoria's Biodiversity (VVB);
- The Commonwealth Department of the Environment (DoEE) Protected Matters Search Tool (PMST) for matters of National Environmental Significance (NES) protected under the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act);
- Birddata website;
- Swift website;
- IUCN – Red List of Threatened Species;
- DELWP Nature Kit map;
- Native Vegetation Credit Register; and
- NVIM tool.

Further detail regarding the above databases used to review flora and fauna values within the study site is provided below:

- A property report was obtained from VicPlan (<https://mapshare.maps.vic.gov.au/vicplan/>) and was perused for any relevant vegetation protection overlays applicable to the site;

- The EPBC Act Protected Matters Search Tool was utilised to retrieve a report listing threatened vegetation communities, flora and fauna with the potential to be impacted upon (radius of 5km);
- Threatened ecological communities and species of flora and fauna which the EPBC Protected Matters Report identified as potentially being impacted upon, were investigated further to establish the likelihood of their presence and potential to be impacted upon;
- The Department of Environment, Land, Water and Planning 2020 and Atlas of Living Australia were used in this desktop analysis as well as SWIFFT and Birddata. VicFlora was utilised for flora species, while VVB, VBA and Nature Kit were accessed to retrieve both flora and fauna records;
- DELWP Nature Kit mapping and NVIM tool were utilised to retrieve modelled data for location risk, remnant patches of vegetation, scattered trees, habitat for rare and threatened species and the extent of historic and current EVCs; and
- Nature Kit and NearMap were used to determine the location of nearby patches of significant vegetation, and to investigate the viability of the assessment site to serve as a wildlife corridor.

4.2. FIELD ASSESSMENT

A comprehensive field assessment was undertaken by Rosey Bennett who is Sustainable Tree Management's DELWP accredited Ecologist, on Thursday 29th September, 2022 to obtain information on flora and fauna values within the study area. The majority of study area was traversed via foot, with all commonly observed vascular flora and fauna species recorded. Some vegetation adjacent to the northern, north-eastern and western boundaries was not accessible due to the presence of Blackberry thickets and/or water inundation. Patches of native vegetation which may be impacted upon by the future development of the land were also identified. The overall condition of vegetation and habitats was noted. The Ecological Vegetation Classes (EVCs) were determined with reference to DELWP pre-1750 and extant EVC mapping (DELWP 2019a).

The survey and assessment undertaken of all the study site vegetation was made from a visual inspection from ground level only. No trees were climbed and no samples of soil, plant material or pest and disease infestation (if present) were taken for analysis.

Defects not apparent from this ground-based visual inspection are excluded from the discussion within this report. Additionally, this report is based upon the condition of the vegetation at the time of assessment only.

The site assessment included the following tasks:

- Assessment of the general ecological condition, including the type and condition of native vegetation, weeds and any other disturbance factors;
- Confirming the EVCs present within the study area;
- Determination of remnant native vegetation within the study area;
- Identification of native trees and/or native vegetation/understory which may be impacted upon by the proposal; and
- The compilation of a list of vegetation (native and introduced) within the study area.

Due to requirement of the application for native vegetation removal to be assessed within the Intermediate Assessment Pathway on this occasion a Vegetation Quality Assessment (VQA) using the Habitat Hectares method is not necessary. This is due to the small amount of native vegetation growing on site and deemed lost due to the subdivision proposal and the majority of the site containing >90% introduced pasture grasses and environmental weeds.

4.3. MAPPING

The locations of native vegetation patches were recorded in the field using “Bluebeam Revu” and the Fast Field app provided by Sustainable Tree Management. Post the site inspection, native vegetation patches were then overlaid onto the Detailed Site Plan prepared by Sustainable Tree Management using “Bluebeam Revu”, see Appendix A.

4.4. REMOVAL, DESTRUCTION OR LOPPING OF NATIVE VEGETATION (THE GUIDELINES)

Under the Planning and Environment Act 1987, Clause 52.17 of the Cardinia Planning Scheme requires a planning permit to remove, destroy or lop native vegetation. The assessment process for clearing of native vegetation follows the ‘Guidelines for the removal, destruction or lopping of native vegetation’ (DELWP 2017).

4.4.1 ASSESSMENT PATHWAY

The Guidelines manage the impacts on biodiversity from native vegetation removal using an assessment-based approach. The extent and location are used to determine the risk associated with an application for a permit to remove native vegetation (see Table 2 below). The location category (1, 2 or 3) has been assessed for all areas in Victoria and is available via DELWP’s Native Vegetation Information Management (NVIM) tool (DELWP 2020b).

Table 2. Assessment pathways for applications to remove, destroy or lop native vegetation (DELWP, 2017).

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

Note: For the purpose of determining the assessment pathway of an application to remove native vegetation, the extent includes any other native vegetation that was permitted to be removed on the same contiguous parcel of land with the same ownership as the native vegetation to be removed, where the removal occurred in the five year period before an application to remove native vegetation is lodged.

4.4.2 VEGETATION ASSESSMENT

Native vegetation is assessed using two key parameters: extent (in hectares) and condition (see Table 3 below).

Table 3. Determination of a patch of native vegetation (DELWP, 2017).

Category	Definition	Extent	Condition
Patch of native vegetation	<p>An area of vegetation where at least 25 per cent of the total perennial understorey plant cover is native; OR</p> <p>An area with three or more native canopy trees where the drip line of each tree touches the drip line of at least one other tree, forming a continuous canopy; OR</p> <p>any mapped wetland included in the Current Wetlands map, available in DELWP systems and tools.</p>	<p>Measured in hectares (ha). Based on hectare area of the native patch.</p>	<p>Vegetation Quality Assessment Manual (DSE, 2004). Modelled condition for <i>Current Wetlands</i>.</p>
Scattered Tree	A native canopy tree that does not form part of a native patch.	<p>Measured in hectares. Each Large scattered tree is assigned an extent of 0.071 hectares (30m diameter). Each Small scattered tree is assigned a default extent of 0.31 hectares (10 metre diameter).</p>	<p>Scattered trees are assigned a default condition score of 0.2 (Outside of a patch).</p>

Notes: Native vegetation is defined in the Victoria Planning Provisions as 'plants that are indigenous to Victoria, including trees, shrubs, herbs and grasses.'

4.5. LIMITATIONS

A detailed onsite assessment was undertaken by Rosey Bennett (STM Ecologist) on Thursday 29th September, 2022. Further surveys at various times throughout the year would possibly result in the identification of additional flora species within the site area which were not visible or identifiable at the time of the site assessment.

Some vegetation growing adjacent to the northern, north eastern and western boundaries was not accessible due to the presence of Blackberry thickets and/or inundation. Neighbouring vegetation was not included as part of this assessment.

Targeted flora or fauna surveys were not conducted at the site. Tables 9 and 10 (Appendices C & D) record species viewed at the time of the site assessment. Any flora species planted or removed after the assessment cannot be accounted for or described in this report. Any fauna species visible at times other than the assessment time cannot be accounted for or described in this report, other than previously documented sightings, as per the Victorian Biodiversity Atlas (VBA) records.

5. RESULTS

5.1. SITE ANALYSIS AND CONDITION OF VEGETATION

The assessment at 6 Link Road, Lang Lang revealed the site area has been significantly modified over time, through disturbances including past land use, nearby local residential development, vehicular use, dumping of rubbish, construction of nearby roadways and the introduction of numerous noxious and environmental weed species. Ten (10) small and small to moderately sized patches of native vegetation identified within the study area, whilst considerably degraded, were found to contain native vegetation consistent with some characteristics of EVC934 Brackish Grassland, EVC53 Swamp Scrub and EVC821 Tall Marsh. However, due to an introduction of exotic weeds the EVCs are poorly represented.

Open land within study area is covered by >90% introduced pasture grasses and exotic weeds and is therefore exempt from requiring a Planning Permit for removal or offsetting under Clause 52.17.

5.2. ECOLOGICAL VEGETATION CLASSES (EVCs)

The study area is located within the Gippsland Plains Bioregion of Victoria (see Figure 2 below). The Ecological Vegetation Classes (EVCs) identified at the site were Brackish Grassland (EVC934), Swamp Scrub (EVC53) and Tall Marsh (EVC821), all endangered EVCs.

NatureKit determined Swampy Woodland (EVC937) as being present within the site pre-1750. However, native vegetation growing within the site was most representative of the above mentioned EVCs, as no *Eucalyptus spp.* were present.

All EVCs identified within the study area were poorly represented due to the lack of indicator and typical species, low species diversity and high levels of disturbance and introduced weeds.



Figure 2. NatureKitv2.0 image depicting 2005 Ecological Vegetation Classes mapped at the assessment site, dated 4/10/2022.

EVC53 – Swamp Scrub - Gippsland Plain Bioregion – Endangered

Swamp Scrub is often found along streams or poorly drained sites with higher nutrient availability. The EVC is usually dominated by *Melaleuca ericifolia* (Swamp Paperbark) which often forms a dense thicket, out-competing other species. Occasional emergent Eucalypts may be present within the EVC.

Typical species found within this EVC include, but are not limited to; *Melaleuca ericifolia* (Swamp Paperbark), *Juncus procerus* (Tall Rush), *Triglochin procerum s.l.* (Water Ribbons), *Persicaria praetermissa* (Spotted Knotweed), *Lobelia anceps* (Angled Lobelia) and *Eleocharis acuta* (Common Spike-sedge).

EVC821 – Tall Rush - Gippsland Plain Bioregion – Endangered

Tall Marsh is a treeless EVC, closed to open grassland or sedge land to 3m tall and usually dominated by Common Reed and Cumbungi. It requires shallow water (generally to 1m deep) and can only tolerate low levels of salinity. Small aquatic and semi-aquatic species are found to occur amongst the reeds (DSE, 2004). Additional species commonly found within Tall Marsh – EVC821 include (but are not limited to); *Rumex bidens* (Mud Dock), *Azolla filiculoides* (Pacific Azolla), *Triglochin procerum s.l.* (Water Ribbons), *Juncus ingens* (Giant Rush) and *Lepilaena cylindrocarpa* (Long-fruit Water-mat).

EVC934 – Brackish Grassland – Gippsland Plain Bioregion - Endangered

Brackish Grassland is a grass or sedgeland occurring on silts in low-lying areas within brackish floodplains. Often occurs in association with Brackish Wetland. Typical species include *Poa labillardierei* (Common Tussock Grass), *Schoenus apogon* (Common Bog-sedge), *Distichlis distichophylla* (Australian Salt Grass) and *Gahnia trifida* (Coast Saw Sedge).

5.3. NATIVE VEGETATION PATCHES AND SCATTERED TREE ASSESSMENT

Within the study area, ten (10) patches of native vegetation were identified. Descriptions are provided below, and photographs are also provided in Appendix G. The majority of patches of native vegetation identified are assumed lost. Loss of native vegetation within 4m of proposed boundaries and impacts by roadway construction and earthworks have been considered.

All patches described below are of poor quality and condition, and of low environmental significance.

No scattered trees were identified within the study area.

Patch 1A

EVC934 – Brackish Grassland – Gippsland Plain Bioregion - 0.018 hectares – (Deemed Lost)

This small patch of native vegetation was located within the eastern section of the study area south of the proposed road, within the impact zone of the proposed truck turning bay. Patch 1A contained predominantly *Ficinia nodosa* (Knobby Clubrush), *Eleocharis acuta* (Common Spike-sedge) and *Triglochin procerum* (Water Ribbons). The patch was interspersed and surrounded by numerous introduced weed species. The patch was very narrow and appeared to be growing within a nature, shallow drainage line.

Patch 2A**EVC934 – Brackish Grassland – Gippsland Plain Bioregion - 0.003 hectares – (Deemed Lost)**

This small patch of native vegetation was located within the south eastern section of the study area and comprised predominantly *Ficinia nodosa* (Knobby Clubrush) and *Eleocharis acuta* (Common Spike-sedge). The patch was interspersed and surrounded by numerous introduced weed species, including introduced *Juncus effusus* (Common Rush). Due to the small patch size and growing location within close proximity to proposed levelling and earthworks, the patch will be deemed lost.

Patch 3A**EVC934 – Brackish Grassland – Gippsland Plain Bioregion - 0.050 hectares – (Deemed Lost)**

This patch of native vegetation was located adjacent to the southern boundary of the study area extending from Proposed Lot 15, through the proposed drainage reserve and into Lot 18. Patch 3A contained predominantly *Ficinia nodosa* (Knobby Clubrush) and *Eleocharis acuta* (Common Spike-sedge). The patch was interspersed and fringed by numerous introduced weed species, including introduced *Juncus effusus* (Common Rush). The patch will be deemed lost due to proposed boundaries and size of proposed allotments.

Patch 4A**EVC934 – Brackish Grassland – Gippsland Plain Bioregion - 0.001 hectares (Deemed Lost)**

This small, narrow patch of native vegetation was located within the south western section of the site, within the proposed drainage reserve. Patch 4A contained predominantly *Schoenus apogon* (Common Bog-sedge) and *Eleocharis acuta* (Common Spike-sedge). The patch was interspersed and surrounded by numerous introduced weed species, including environmental weed *Cyperus eragrostis* (Drain Flat Sedge). The patch will be deemed lost due to proposed boundaries, size of proposed Lot 27 and proposed roadway.

Patch 5A**EVC934 – Brackish Grassland – Gippsland Plain Bioregion - 0.012 hectares (Deemed Lost)**

Patch 5A was observed growing within the south-central section of the study area. This patch of native vegetation comprised *Ficinia nodosa* (Knobby Clubrush), *Schoenus apogon* (Common Bog Sedge) and *Eleocharis acuta* (Common Spike-sedge). The patch was interspersed and fringed by numerous introduced weed species, including introduced *Juncus effusus* (Common Rush). Patch 5A is deemed lost due to the proposed subdivision boundaries and size of proposed Lot 28.

Patch 6A**EVC934 – Brackish Grassland – Gippsland Plain Bioregion - 0.012 hectares (Deemed Lost)**

Patch 6A was observed growing adjacent to the western boundary. This patch of native vegetation comprised predominantly *Schoenus apogon* (Common Bog Sedge), with some scattered *Eleocharis acuta* (Common Spike-sedge) and *Acacia paradoxa* (Prickly Wattle). The patch was interspersed and fringed by numerous introduced weed species, including *Juncus effusus* (Common Rush) which extended eastwards along the perimeter of the embankments. Patch 6A is deemed lost due to its growing location within proposed smaller lot sizes (< 4000m²) adjacent to the western boundary.

Patch 7A**EVC53 – Swamp Scrub – Gippsland Plain Bioregion - 0.108 hectares (Deemed Lost)**

Patch 7A was located adjacent to the northern boundary of the study area, within close proximity to Western Port Road. Patch 7A will be lost due to proposed internal boundaries, the proposed road to the east of the site (extension of Clarks Road) and the proposed draining design/infrastructure. This patch of low ecological value comprised of *Ficinia nodosa* (Knobby Clubrush), *Eleocharis acuta* (Common Spike-sedge) and *Juncus pallidus* (Great Soft Rush), interspersed with introduced *Juncus effusus* (Common Rush) and other environmental weeds. One small, dead *Acacia melanoxylon* (Blackwood) was located within the patch, likely due to waterlogging within the site from recent heavy rainfalls.

Patch 8A**EVC934 – Brackish Grassland – Gippsland Plain Bioregion - 0.003 hectares (Deemed Lost)**

This small patch of native vegetation was located within proposed Lot 24, slightly east of the centre of the study area. Patch 8A contained predominantly *Ficinia nodosa* (Knobby Clubrush) and *Eleocharis acuta* (Common Spike-sedge). The patch was interspersed and surrounded by numerous introduced weed species, including introduced *Juncus effusus* (Common Rush). Patch 8A is growing within the north eastern corner of proposed Lot 24, within the developable area. There will be no allowable vehicle access onto the road along the eastern boundary so all access will be via Industrial Road. As such, Patch 8a is at the rear of the site where future development will likely be located.

Patch 9A**EVC821 – Tall Marsh – Gippsland Plain Bioregion - 0.001 hectares (Deemed Lost)**

This small patch of native vegetation comprised predominantly *Phragmites Australis* (Common Reed) and *Hop Goodenia* (*Goodenia ovata*) and was located at the plateau of a large mound, centrally within the site. Surrounded by numerous weeds, this small patch is of very low ecological value and significance. Although Patch 9A is located within a proposed lot size larger than 4000m², the patch will be deemed lost due to the significant earthworks required to level this section of the site.

Patch 10A**EVC934 – Brackish Grassland – Gippsland Plain Bioregion - 0.002 hectares – (Retention)**

This small patch of native vegetation was located within the eastern section of the study area within the footprint of the proposed road. Patch 10A contained predominantly *Ficinia nodosa* (Knobby Clubrush) and *Eleocharis acuta* (Common Spike-sedge). The patch was interspersed and surrounded by numerous introduced weed species, including introduced *Juncus effusus* (Common Rush). Patch 10A has been nominated for retention.

5.4. INTRODUCED VEGETATION

The majority of the site is dominated by exotic weeds including pasture grasses, environmental, noxious and woody weeds. Species observed (but were not limited to) included *Juncus effusus* (Common Rush), *Ehrharta erecta* (Panic Veldt Grass), *Cyperus eragrostis* (Drain Flat-sedge), *Pennisetum clandestinum* (Kikuyu), *Oxalis pes-caprae* (Soursob), *Vicia sativa* (Common Vetch), *Arctotheca calendula* (Capeweed), *Lotus subbiflorua* (Hairy Birds-foot Trefoil), *Phalaris aquatica*

(Toowoomba Canary-grass), *Plantago lanceolata* (Ribwort Plantain) and *Holcus lanatus* (Yorkshire Fog).

A comprehensive list of weeds, (all floral species) can be found within Appendix C. Several images containing weeds observed within the study area can be found in Appendix H.

5.5. FLORA SURVEY

A total of 43 flora species were observed within the study area including 6 indigenous species, some Victorian natives with the remainder being exotic in origin. Appendix C lists all flora observed during the site assessment.

5.6. FAUNA AND FAUNAL HABITAT

Most of the study area comprised > 90% introduced weed species. The area is likely to be used as a foraging resource by common generalist bird species such as the Australian Magpie (*Cracticus tibicen*) and the *Grallina cyanoleuca* (Magpie Lark) which were recorded on site. Numerous *Cisticola exilis* (Golden-headed Cisticola) were identified inhabiting the areas of long dense grass.

Two species of waders were observed foraging within the site. This included an *Elseyornis melanops* (Black-fronted Dotterel) and an *Egretta novaehollandiae* (White-faced Heron). With limited native vegetation growing on site, these species are more likely to be associated with the Lang Lang Water Treatment Plant to the west and what appears to be recently manmade wetlands to the south.

No faunal species of conservation significance were observed during site assessment.

Appendix D lists all faunal species observed during the site assessment.

5.7. NATIVE VEGETATION REMOVAL (THE GUIDELINES)

The below clearing proposal is based upon the current proposed subdivision plan for 6 Link Road, Lang Lang.

5.7.1 VEGETATION PROPOSED FOR REMOVAL

The study area is within Location 2, with 0.208 hectares of native vegetation proposed to be removed and 0 large trees. As such, the Permit application falls under the Intermediate Assessment Pathway, see Table 4 below.

Table 4. Summary of Native Vegetation Removal (the Guidelines).

Assessment pathway	Intermediate
Total Extent (past and proposed) (ha)	0.208 ha
Extent of past removal (ha)	0.0 ha
Extent of proposed removal (ha)	0.208 ha
EVC Conservation Status of vegetation to be removed	Endangered Ecological Vegetation Class
Large Trees (no.)	0
Location Category	2

5.7.2 OFFSET REQUIREMENTS

The offset requirement for native vegetation removal is 0.072 General Habitat Units (GHU) and 0 Large Trees.

A summary of proposed vegetation losses and associated offset requirements is presented in Table 5 below and the Native Vegetation Removal (NVR) Report is presented in Appendix I.

Table 5. Summary of Offset requirements.

General Offsets Required	0.072 General Habitat Units
Large Trees	0
Vicinity (catchment / LGA)	Port Philip and Westernport CMA / Cardinia Shire Council
Minimum Strategic Biodiversity Value*	0.352

Note: GHU – General Habitat Units; *The minimum Strategic Biodiversity Value is 80% of the weighted average score across habitat zones where a General Offset is required.

5.8. ENVIRONMENTAL SIGNIFICANCE WITHIN LANDSCAPE

According to the EPBC Act Protected Matters Search Tool (PMST), the study area at 6 Link Road, Lang Lang is located within 5km of RAMSAR listed wetlands (wetlands of international significance) – Westernport Bay.

At a site level, the assessment area was found to hold low ecological value due to the presence of introduced weeds, lack of native vegetation, fragmented and highly disturbed nature of the site. However, patches of native vegetation growing within the study area may provide minor linkages of habitat and resources to nearby patches of native vegetation within the following parks, reserves and/or forested areas:

- Lang Lang Water Treatment Plant - within 0.5km (adjacent to the western boundary)
- Unknown, recently created wetlands – within 0.5km (adjacent to the southern boundary)
- Lang Lang Bushland Reserve – within 3km
- Adams Creek Nature Conservation Reserve – within 5km
- Western Port Bay (RAMSAR Listed Wetlands) – within 5km

5.8.1. SITE SIGNIFICANCE

According to the EPBC Act Protected Matters Search Tool, the study area is located within the feature area of RAMSAR Listed Wetlands (Wetlands of International Significance). The study area at 6 Link Road, Lang Lang is located approximately 4.2km to the east of the RAMSAR Listed Wetlands within the Western Port Bay.

The study area contains limited native vegetation. Inundated areas may provide minor connectivity for local and migratory avian species. However, species of conservation significance are unlikely to frequent the site due to a high level of site disturbance. The study area is unlikely to provide adequate habitat for marine or aquatic reliant/dwelling species.

In my opinion, proposed future development within the site is unlikely to cause a significant level of disturbance to locally occurring and migratory faunal species.

Threatened ecological communities and species of flora and fauna which are protected under the *EPBC Act* 1999, which have the potential to be impacted upon, according to the *EPBC Act* 1999, Flora and Fauna Guarantee (FFG) Act 1988 are detailed in the series of tables in Appendix F - Table 12 through to Table 18. These comprehensive lists include species which have been recorded historically (post 1760) within a 5km radius of the study area.

Conservation listed species may occasionally use drainage lines or other low lying areas within the study area, however, there is no important or limiting habitat for species of national or state conservation significance. The likelihood of these species occurring in the study area is further addressed within Appendix F.

The likelihood of impact to each of the threatened communities and species of flora and fauna has also been assessed. The determination has been based upon desktop research and in field analysis.

5.8.2 FLORA

The VBA contains records of 5 nationally and state significant flora species previously and historically recorded within 5km of the study area (post 1760). See Appendix E, Figures 7-8.

No nationally or state significant rare or threatened flora species were detected during the recent site assessment. Due to modified and disturbed native vegetation within the study area, small patch sizes and high degree of weed invasion, the likelihood of rare or threatened flora persisting onsite is low.

The proposal is therefore unlikely to impact upon any nationally or state wide significant flora species.

5.8.3 FAUNA

The VBA contains records of 17 nationally and state significant fauna species previously and historically recorded within 5km of the study area (post 1760). See Appendix E, Figures 4-6.

No nationally or state significant rare or threatened fauna species were detected during the recent site assessment. Elements of the site could provide habitat for some species of locally occurring fauna, in particular avian species. However, based on the modified nature of the site, local urbanisation and the proximity of previous records, significant fauna species are considered unlikely to rely on habitat found within the site.

Therefore, following a thorough and comprehensive desktop and site analysis, in my opinion the likely proposal to remove native vegetation on site is unlikely to impact any nationally or state wide significant fauna species.

5.8.4 ECOLOGICAL VALUES

Nearby land which has been previously/historically cleared for agricultural, industrial, and residential purposes, has broken the continuity of native vegetation within the area on a broader/landscape scale. Over time this has increased the edge effects of existing vegetation. This is particularly relevant to the endangered EVCs located within the assessment area. Native vegetation observed within study area is likely to provide minor ecological value in terms of habitat, resources, and connectivity to nearby habitat for native fauna species.

The native vegetation within the assessment area contains limited ecological values, however broadly, these include:

- Presence of the Endangered EVCs in the Gippsland Plains Bioregion; and
- Potential connectivity, minor linkages (wildlife corridor) within the local area.

5.8.5 COMMUNITIES

Two nationally listed ecological communities are predicted to occur within 5km of the study area according to the EPBC Act Protected Matters Search Tool:

- Natural Damp Grassland of the Victorian Coastal Plain; and
- Subtropical and Temperate Coastal Saltmarsh

However, vegetation within the study area does not meet the condition thresholds that define any national or state-significant communities. This is due to small patch sizes, absence of key indicator species, low diversity of native flora and extreme weed cover.

See Appendix F, Table 11 for further detail.

5.8.6 THREATENING PROCESSES – FFG ACT 1988

The below threatening processes as determined by the *Flora and Fauna Guarantee Act 1988* (FFG) have been identified and should be considered:

- *Invasion of native vegetation by environmental weeds;*
- *Invasion of native vegetation by *Rubus fruticosus* L. agg;*
- *Input of toxic substances into Victorian rivers and streams;*
- *Alteration to the natural flow regimes of rivers and streams; and*
- *Increase in sediment input into Victorian rivers and streams due to human activities*

An overview of preliminary methods to mitigate threatening processes is detailed in Section 7.2.

6. BIODIVERSITY LEGISLATION AND POLICY

6.1. ENVIRONMENT PROTECTION AND BIODIVERSITY CONSERVATION ACT 1999 (COMMONWEALTH)

Under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act), an action will require approval from the Federal Environment Minister if the action has, will have, or is likely to have a significant impact on a matter of national environmental significance.

No EPBC listed threatened flora or fauna species or threatened ecological communities were recorded within the study area. Whilst some species of conservation significance have been recorded within 5km of the study area, further investigation concluded these species were generally associated with the Westernport RAMSAR listed wetlands (distance of approximately 4.2km). The site lacks suitable habitat for wetland reliant species, with low species diversity and high levels of disturbance. Temporary waterlogged areas observed may provide foraging habitat for some avian species, however, native vegetation present within the site is unlikely to form important or limiting habitat for conservation listed species. Further, the site is located adjacent to a residential development with moderate to high levels of disturbance from adjacent Western Port Road.

Taking all data and observations into consideration it is unlikely an EPBC Act referral will be required for the current subdivision proposal.

Construction across/within a drainage line to the west of the site associated with nearby Adams Creek and Lang Lang River should be avoided. Targeted aquatic faunal surveys may need to be conducted to ensure conservation listed species are not impacted by construction within this area.

6.2. FLORA AND FAUNA GUARANTEE ACT 1988 (VICTORIA)

The primary objective of the *Flora and Fauna Guarantee Act 1988* is to prevent the extinction of all biota and ecological communities. Under the Act, a Permit is required to remove or impact the following items on public land:

- threatened flora and fauna species;
- threatened ecological communities and
- protected flora.

The FFG Act 1998 also provides for the use of Interim Conservation Orders (ICOs) for the urgent protection of a critical habitat of a listed threatened species and community, which can be applied to both public and private land.

There are no confirmed records of species listed as threatened and/or protected under the FFG Act 1998 at 6 Link Road, Lang Lang. A permit under the FFG Act 1998 is not required for the current subdivision proposal.

6.3. PLANNING AND ENVIRONMENT ACT 1987

The *Planning and Environment Act 1987* controls the planning and development of land in Victoria and provides for the development of planning schemes across all municipalities. Standard sections are contained in all planning schemes – of the Victorian Planning Provisions (VPP). Of particular relevance to development proposals are the native vegetation provisions, which are contained in several sections of the State sections of all Planning Schemes and may also be included in the local section (zoning and overlays). Clause 52.17 requires a planning permit to remove, destroy or lop native vegetation, including dead native vegetation, however certain exemptions may apply. Decision guidelines are contained in Clause 52.17-5. The planning scheme defines ‘native vegetation’ as “*Plants that are indigenous to Victoria, including trees, shrubs, herbs and grasses*” (Clause 72).

6.3.1 LOCAL PLANNING SCHEMES – CARDINIA SHIRE COUNCIL

The study area is located within the Cardinia Shire Council municipality. The following zoning is applicable to the site:

- Industrial 1 Zone – Schedule to the Industrial 1 Zone (IN1Z)

No specific vegetation protection overlays are applicable to the site.

6.3.2 VICTORIA'S GUIDELINES FOR THE REMOVAL, DESTRUCTION AND LOPPING OF NATIVE VEGETATION

Sustainable Tree Management assesses all native vegetation in accordance with 'Victoria's Guidelines for the removal, destruction and lopping of native vegetation', (hereafter *the Guidelines*).

Clause 52.17 and the Guidelines defines how native vegetation removal is assessed and offset in Victoria. The Guidelines form part of all Victorian Planning Schemes are set out to describe the application of Victoria's state-wide policy in relation to assessing and compensating for the removal of native vegetation, including the assessment of impacts and the calculation of offsets. Unless exemptions apply, the Guidelines must be applied when a permit is required to remove native vegetation under Clause 52.17 of the relevant Planning Scheme, see Figure 3 below.

52.17-5 <small>12/12/2017 VC138</small>	Offset requirements <p>If a permit is required to remove, destroy or lop native vegetation, the biodiversity impacts from the removal, destruction or lopping of native vegetation must be offset, in accordance with the <i>Guidelines</i>. The conditions on the permit for the removal, destruction or lopping of native vegetation must specify the offset requirement and the timing to secure the offset.</p>
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Figure 3. Extract: page 610 Victoria Planning Provisions – Planning Scheme

6.3.3 THE THREE-STEP APPROACH

When planning to remove any native vegetation, the 'three-step approach', as set out by DELWP in *the Guidelines* must be adhered to. This policy is in place to mitigate damage caused to native vegetation by clearing and construction.

- 1) **AVOID** - In line with this approach, it is firstly recommended that the plans for the proposed structure are re-assessed to determine if alterations in design and placement are possible, such that removal of any native vegetation is not required, incorporating native vegetation into the design if possible OR an alternative location/site be considered which would not require the removal of any native vegetation.
- 2) **MINIMISE** - If the recommendations in Point 1 are not possible, it is advised that all possible ways to reduce any modification to native vegetation are considered. This may include redesigning of proposed structures and/or selecting a site which has native vegetation of lesser quality than the proposed patch.
- 3) **OFFSET** – If avoiding or minimising removal of native vegetation is not possible, an offset must be provided to compensate for the losses. An offset strategy must also be included with an application to remove vegetation.

6.3.4 IMPLICATIONS

The study area is within Location 2, with 0.145 hectares of native vegetation proposed to be removed and 0 large trees. As such, the permit application falls under the Intermediate assessment pathway.

The offset requirement for native vegetation removal is 0.048 General Habitat Units (GHU) and 0 Large Trees.

A Planning Permit is required to remove, destroy or lop any native vegetation under Clause 52.17.

6.4. CATCHMENT AND LAND PROTECTION ACT 1994 (VICTORIA)

The Catchment and Land Protection Act 1994 (CaLP Act) intends to manage land degradation including detrimental environmental or economic impacts of declared noxious weeds and pest animals.

Declared noxious weeds are categorised into four groups depending on their known and potential impact within each region. These categories are as follows:

- State Prohibited Weeds (S) are either currently absent in Victoria or are restricted enough to be eradicated. The Victorian Government is responsible for their control.
- Regionally Prohibited Weeds (P) in the Port Phillip Catchment Management Authority (CMA) area are not necessarily widespread but have the potential to become so. Weeds that meet this criteria may be eradicated from the region. It is the responsibility of the land owner to control these weeds on their land but not on adjacent roadside reserves.
- Regionally controlled weeds (C) are usually widespread but it is important to ensure prevention of further spread. The landowner is responsible for controlling these weeds on their property and on adjacent roadside reserves.
- Restricted Weeds (R) include plants that pose an unacceptable risk of spreading within the state or to other Australian states and are considered to be a serious threat to Primary Production, Crown Land, the environment and or community health. Trade in these weeds and their propagules in any form is strictly prohibited.

Table 6 below details any declared noxious weeds located within the study area.

Table 6. Declared noxious weeds recorded within the study area.

Scientific name	Common name	Control Category
<i>Cirsium vulgare</i>	Spear Thistle	Regionally Controlled
<i>Echium plantagineum</i>	Paterson's Curse	Regionally Controlled
<i>Rubus fruticosus</i> L.agg	Blackberry	Regionally Controlled
<i>Oxalis pes-caprae</i> L.	Soursob	Restricted

6.5. WILDLIFE ACT 1975 AND WILDLIFE REGULATIONS 2013 (VICTORIA)

The Wildlife Act 1975 (and associated Wildlife Regulations 2013) is the primary legislation in Victoria providing for protection and management of wildlife. Authorisation for habitat removal may be obtained under the Wildlife Act 1975 through a licence granted under the Forests Act 1958, or under any other Act such as the Planning and Environment Act 1987. Any persons engaged to remove, salvage, hold or relocate native fauna during construction must hold a current Management Authorisation under the Wildlife Act 1975, issued by DELWP.

7. MITIGATION MEASURES AND RECOMMENDATIONS

7.1. BEST PRACTICE MITIGATION MEASURES

Recommended measures to mitigate impacts upon terrestrial values present within the study area may include:

- Minimise impacts to native vegetation and habitats through construction and micro-siting techniques, including fencing retained areas of native vegetation. These areas nominated for retention must be clearly identifiable as 'No Go Zones' with appropriate signage installed;
- Regular monitoring of the condition of protected flora and fauna habitat sites within 'No Go Zones' and protective measures at the site should be undertaken every 7 days;
- Soil disturbance should be avoided or kept to a minimum to avoid and minimise impacts to fauna habitats;
- Prior to removing any vegetation or habitat, the Project Manager must arrange an onsite inspection with the relevant authorities. This important step will identify trees/vegetation or habitat to be removed. Any vegetation or habitat removal must be in accordance with endorsed plans and relevant permits.
- Plant, equipment, material or debris must not be placed or stored within the limit of the root zone of the tree or vegetation to be retained.
- All contractors must be made aware of ecologically sensitive areas to stop inadvertent disturbance to areas marked for retention. Native vegetation (areas of sensitivity) should be included as a mapping overlay on any construction plans;
- Tree Protection Zones (TPZs) must be implemented to prevent indirect losses of native vegetation during construction activities (DSE, 2011). A TPZ applies to a tree and is a specific area above and below the ground, with a radius 12 x the DBH. At a minimum standard a TPZ should consider the following:
 - A TPZ of trees is a radius no less than two metres or greater than 15 metres;
 - Construction, related activities and encroachment (i.e. earthworks such as trenching that disturb the root zone) should ideally be excluded from the TPZ;
 - Where encroachment exceeds 10% of the total area of the TPZ, the tree should be considered as lost and offset accordingly;

- The above guidelines may be varied if a qualified arborist confirms the works will not significantly damage the tree (including stags / dead trees). In this case the tree would be retained, and no offset would be required; and
 - Where the minimum standard for a TPZ has not been met an offset may be required.
- Construction stockpiles and machinery and any other infrastructure must be placed away from areas supporting native vegetation;
 - Ensure that best practice sedimentation and pollution control measures are undertaken at all times, in accordance with Environment Protection Authority guidelines (EPA 1991; EPA 1996; Victorian Stormwater Committee 1999) to prevent offsite impacts to waterways/stormwater drains;
 - Indigenous flora provides valuable habitat for indigenous fauna. Should a landscape plan be required, indigenous species should ideally be sourced locally;
 - Weed management strategies must be implemented to ensure existing weed populations do not proliferate because of any works conducted on site. The control of Weeds of National Significance and noxious weeds must be managed in accordance with legislative requirements and recommendations.

7.2. RECOMMENDATIONS TO MITIGATE POTENTIALLY THREATENING PROCESSES

It is recommended that to mitigate potentially threatening processes which have been identified as possible at the proposed site, the following measures are implemented, see Table 7 below:

Table 7. Summary of potentially threatening processes and appropriate mitigation measures to be undertaken.

Potentially Threatening Process	Mitigation measures
Invasion of native vegetation by environmental weeds	Ensure measures to control and eradicate environmental weeds are undertaken. Ensure appropriate measures are taken to remove and dispose of weed species during clearance of the site. Ensure appropriate measures are undertaken to mitigate the spread of weed species by machinery and vehicles on site.
Invasion of native vegetation by <i>Rubus fruticosus</i> L. agg	Ensure measures to control and eradicate <i>Rubus fruticosus</i> L. agg are undertaken. Ensure appropriate measures are taken to remove and dispose of weed species during clearance of the site.
Input of toxic substances into Victorian rivers and streams	Ensure that best practice sedimentation and pollution control measures are undertaken at all times, in accordance with Environment Protection Authority guidelines to prevent offsite impacts to waterways/stormwater drains.
Alteration to the natural flow regimes of rivers and streams	Ensure existing drainage lines are considered and are not filled in without the appropriate consultation and advice from relevant water authorities. Ensure that best practice sedimentation and pollution control measures are undertaken at all times, in accordance with Environment Protection Authority guidelines to prevent offsite impacts to waterways/stormwater drains.

Potentially Threatening Process	Mitigation measures
Increase in sediment input into Victorian rivers and streams due to human activities	Ensure that best practice sedimentation and pollution control measures are undertaken at all times, in accordance with Environment Protection Authority guidelines to prevent offsite impacts to waterways/stormwater drains.

7.3. AVOID AND MINIMISE STATEMENT

Impacts to one patch of native vegetation growing to the east of the site will be avoided due to the large lot size greater than 1 hectare planned within Lot A.

Impacts to nine (9) small and moderately sized patches of low value native vegetation observed growing within the site, cannot be avoided and as such, will be deemed lost due to the scheduled lot sizes within the proposed subdivision, proposed boundaries, required earthworks and/or to facilitate construction of the proposed road infrastructure.

No viable options exist to further avoid or minimise native vegetation removal without undermining the objectives of the proposal. All remnant patches of native vegetation observed within the site have been highly disturbed and significantly modified, with a high percentage of weed cover and are of low environmental significance.

7.4. OFFSET STRATEGY

According to DELWPs Native Vegetation Offset Register (DELWP, 2020), there are thirty-six offset sites within the Port Phillip and Westernport Catchment Management Authority (CMA) that can be used to satisfy the General Habitat Unit offset requirements of native vegetation removal on site.

The client will purchase the required offset from a native vegetation credit site. A report of available native vegetation credits is included with this application, which demonstrates that the offset is available.

A copy of the Report of Available Native Vegetation Credits identifying the relevant offsite sites is provided in Appendix K.

8. FURTHER REQUIREMENTS

Further requirements associated within the development of the study area are provided in Table 8 below.

Table 8. Further requirements associated with the development of the assessment area.

Relevant Legislation	Implications	Further Action
<i>Environment Protection Conservation and Biodiversity Act 1999</i>	<p>The site is located within 5km of a Matter of National Environmental Significance (MNES) – that being RAMSAR Listed Wetlands. It is unlikely that native vegetation removal within the site will impact upon this MNES due to the distance of the site from the wetlands, small patches of low species diversity within the site, disturbance and modification of the site and lack of suitable habitat on site for wetland reliant/dwelling species.</p> <p>In addition, it is unlikely that native vegetation removal within the site will have an adverse or significant impact upon protected migratory species due to the lack of suitable habitat located on site for wetland reliant species.</p> <p>It is unlikely a referral under the EPBC Act 1999 will be required for native vegetation removal within the development site.</p> <p>However, should there be proposed impacts to the watercourse adjacent to the western boundary, further targeted analysis should be conducted to determine the presence/likelihood of impact to MNES Australian Grayling.</p>	<p>No further action is required at this stage of planning.</p> <p>In my opinion it is unlikely a referral to the Commonwealth Environment Minister will be required regarding the development of the site under the EPBC Act 1999.</p> <p>However, should there be construction impacts to the watercourse and drainage lines within the site, associated with Adams Creek and Lang Lang River, targeted assessments regarding aquatic fauna may be required.</p>
<i>Flora and Fauna Guarantee Act 1988</i>	<p>There are no confirmed records of species listed as threatened and/or protected under the FFG Act 1998. The majority of the assessment area is privately owned, therefore a permit under the FFG Act 1998 is not required.</p>	<p>No further action required at this stage of planning.</p>
<i>Planning and Environment Act 1987</i>	<p>The assessment area is in Location 2, with 0.208 hectares of native vegetation proposed to be removed, including 0 large trees. As such, the permit application falls under the Intermediate Assessment Pathway.</p> <p>The offset type is a general offset.</p> <p>The minimum strategic biodiversity value figure is 0.352.</p> <p>The offset required for native vegetation removal is 0.072 General Habitat Units and 0 large trees.</p> <p>A Planning Permit from the Cardinia Shire Council is required to remove, lop or destroy any native vegetation under Clause 52.17.</p>	<p>Prepare and submit and Planning Permit application.</p>
<i>Catchment and Land Protection Act 1994</i>	<p>Weed species listed under the CaLP Act were recorded within the study area. To meet requirements under the CaLP Act, listed noxious weeds should be appropriately controlled throughout the assessment area.</p>	<p>Planning permit conditions may include a requirement for a Weed Management Plan.</p>
<i>Wildlife Act 1975</i>	<p>Any persons engaged to conduct salvage and translocation, or general handling of terrestrial fauna species must hold a current Management Authorisation.</p>	<p>Ensure wildlife specialists hold a current Management Authorisation.</p>

9. CONCLUSION AND RECOMMENDATIONS

The field assessment, site and desktop analysis revealed the assessment area at 6 Link Road, Lang Lang has been drastically modified. High levels of disturbance were observed due to the past and current land use, nearby roads and highways, residential development/s within proximity and the introduction of numerous environmental weeds.

Vegetation observed and assessed is lacking in native perennial understory plant cover, due to the presence of introduced grasses and weeds, recent inundation from heavy rainfall and soil disturbance. The site comprises greater than 90% of introduced pasture grasses and exotic weeds, including four (4) noxious weeds. The site is in poor ecological condition due to soil disturbance and the dominance of weed species that have outcompeted native vegetation.

Ten (10) small and small to moderately sized patches of native vegetation of low ecological value were identified within the study area. Patches of native vegetation containing greater than 25% native perennial understory plant cover are interspersed with a high volume of introduced weed species. The north, eastern and western boundaries of the site are bordered by third party owned vegetation comprising of dense native scrub, predominantly *Melaleuca ericifolia* (Swamp Paperbark) and several *Acacia melanoxylon* (Blackwood) specimens.

Whilst NatureKit determined Swampy Woodland (EVC937) as being present at the site pre-1750, native vegetation growing within and adjacent to the boundaries of the site was more representative of EVC53 – Swamp Scrub, EVC934 – Brackish Grassland and EVC821 – Tall Marsh.

It appeared that recent heavy rainfall experienced within the area led to several low-lying areas being inundated. Several of these areas particularly adjacent to the common boundaries were inaccessible to traverse due to waterlogging and *Rubus fruticosus* (Blackberry) thickets.

The site is located within 5km of a Matter of National Environmental Significance (MNES) – that being RAMSAR Listed Wetlands within the Western Port Bay. It is unlikely that the subdivision proposal and subsequent removal of several small patches of native vegetation will impact upon this MNES. This is due to the distance of the site from the wetlands, small patch sizes, high levels of disturbance and modification of the site. Further, there is a scarcity of suitable habitat for wetland reliant/dwelling species.

No faunal species of conservation significance were observed during the site investigation. Elements of the site may provide suitable habitat for some species of locally occurring fauna, in particular avian species. However, based on the highly modified nature of the site, local urbanisation and the proximity of previous records, significant faunal species are considered unlikely to rely on habitat within the site.

It is unlikely native vegetation removal within the site will have an adverse or significant impact upon protected migratory species. This is due to the lack of suitable habitat including refuge and shelter for wetland reliant species.

A watercourse was observed adjacent to the western boundary and an associated drainage line extends eastward through the northern section of the site. These bodies of water connect to Adam's Creek which is linked to the nearby Lang Lang River and flows directly into Western Port Bay.

There is a moderate likelihood of a nationally significant species of fish, *Prototroctes maraena* (Australian Grayling) being present within the watercourse which extends along the western boundary. This species is protected both nationally, under the *EPBC Act 1999* and statewide under the *Flora and Fauna Guarantee Act 1988*. The watercourse could potentially provide habitat for this species and may provide connectivity to Adam's Creek and Lang Lang River. This species was recorded approximately 1.6km from the site, in 2011. Ideally, impacts to this watercourse should be avoided. If the watercourse is impacted, further targeted analysis to determine the presence or absence of this species may be required.

Further, proposed construction within the study area must ensure no sediments or toxic pollutants enter the creek system and therefore Western Port Bay. Best practise sedimentation and pollution control measures (to EPA standard) must be carried out and enforced to ensure this internationally significant wetland system is not adversely affected by upstream construction.

Future road construction (Clarks Road extension) to the east of the site, may require an Arboricultural Impact Assessment (Arborist) to determine potential impacts to neighbouring vegetation.

Impacts to Patch 10A are being avoided due to the proposed large lot A to the east of the study site and the lot being located outside of areas of impact/proposed infrastructure. Due to proposed lot sizes being less than 4000m², proposed earthworks and construction envelopes, the majority of patches of native vegetation will be lost under Clause 52.17.

In summary, providing the appropriate measures are undertaken to mitigate the spread of significant weeds and to protect native vegetation, I am confident the current proposal at 6 Link Road, Lang Lang will have minimal impact upon native flora and fauna. Further, a comprehensive well-designed indigenous landscape plan focused on planting locally sourced indigenous tree/plant stock, will provide a greater net benefit to the site and surrounding land.

Should you have any questions with regards to this report please do not hesitate to make contact.

Yours sincerely,

[Redacted Signature]

Ecologist
m: 0412 129 598
e: [Redacted Email]



10. QUALIFICATION OF CONSULTANT

Qualifications

Bachelor of Science with Distinction – Ecology Major – Federation University, Australia

Accredited Native Vegetation Assessor – DELWP

Certificate of Completion – Wildlife & Community Conservation, Chitwan NP, Nepal

Experience

Ecologist - Sustainable Tree Management - 2020 to Present

Volunteer AWARE Wildlife Rescue – 2020 to Present

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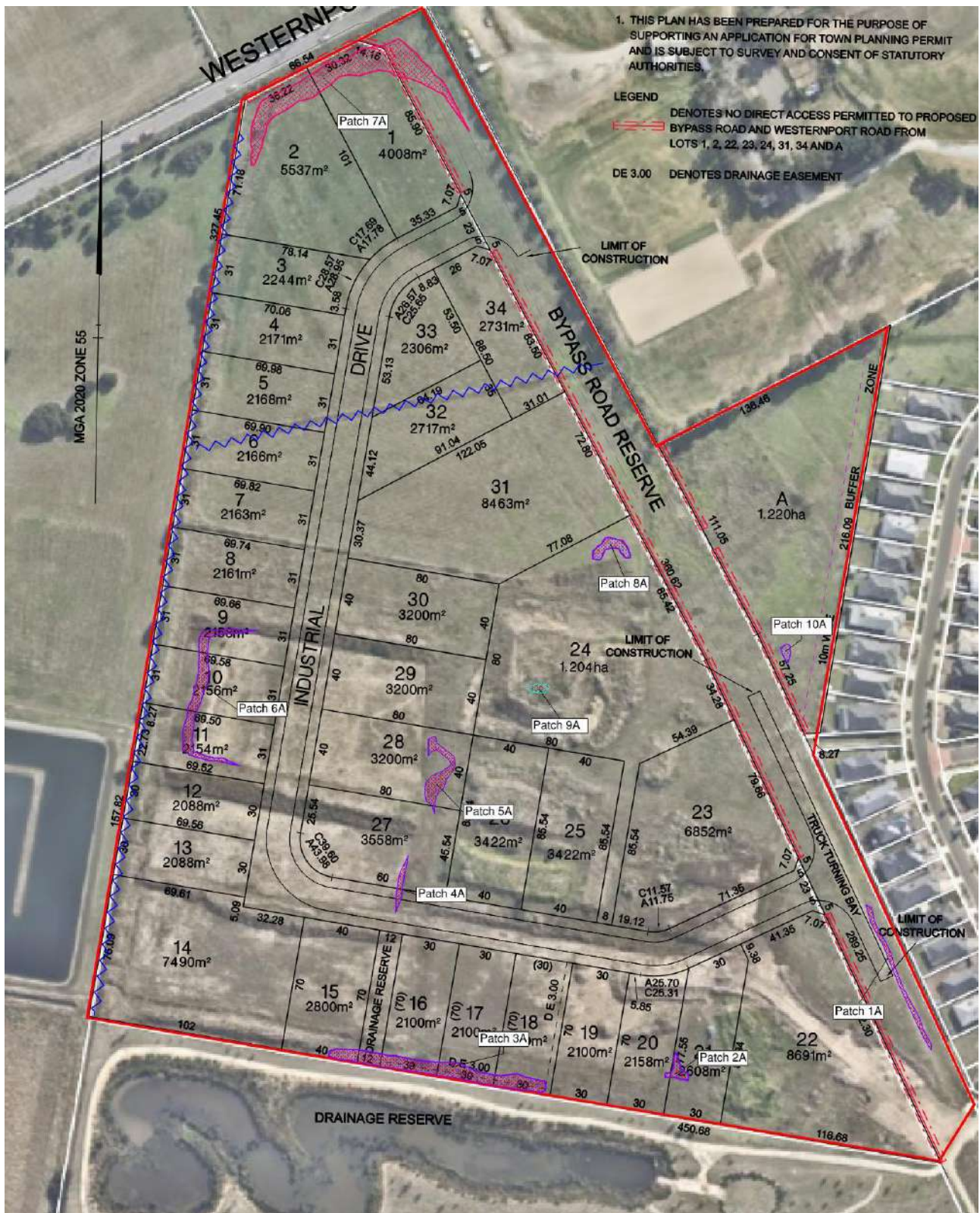
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APPENDIX A – SUSTAINABLE TREE MANAGEMENT - HABITAT ZONE & NATIVE VEGETATION MAP – DATED 16/02/2023



KEY Boundary of Study Area EVC58 - Swamp Scrub EVC821 - Tall Marsh EVC934 - Brackish Grassland Native Vegetation Deemed Lost - Subdivision Boundaries / Construction / Earthworks Water Course / Drainage Line	FILENAME: 6 Link Road Lang Lang - Native Vegetation & Habitat Zone Map V4	SCALE 1:1700 @ A3 N
	ADDRESS: 6 Link Road, Lang Lang	
	DATE: 16/02/2023	
	 Sustainable Tree Management Environmental Impact Assessment (EIA)	

APPENDIX C. FLORA

All species of flora identified within the site assessment area, except the recently planted flora species adjacent to the roadside reserve in the proximity of the recently upgraded roads and footpaths, has been listed in Table 9 below:

Legend:

N - Noxious weed	P - Planted or native regrowth <10 years	E – Introduced/exotic species
I - Indigenous	T – Tree	S – Shrub
H – Herb	G – Graminoid	C – Scrambler/Creeper
F – Fern	NV – Native to Victoria	I – Indigenous
RC – Regionally Controlled Weed	R – Restricted Weed	Se/Ru – Sedge/Rush
	NAus – Australian Native	Env – Environmental Weed

Table 9. List of flora species observed at the site, indicating their life form and origin.

Scientific name	Common name	Life Form	Notes
<i>Acacia melanoxylon</i>	Blackwood	T	I
<i>Acacia mearnsii</i>	Black Wattle	T	I
<i>Acacia paradoxa</i>	Prickly Wattle	S	I
<i>Alopecurus pratensis</i>	Meadow Foxtail	G	E/Env
<i>Anthoxanthum odoratum</i>	Sweet Vernal Grass	G	E/Env
<i>Arctotheca calendula</i>	Cape Weed	H	E/Env
<i>Avena fatua</i>	Wild Oat	G	E/Env
<i>Bromus catharticus</i>	Rescue Grass	G	E
<i>Carex vulpinoidea</i>	Fox-sedge	Se/Ru	E
<i>Cenchrus clandestinus</i>	Kikuyu Grass	G	E/Env
<i>Centaurea erythraea</i>	Common Centuary	H	E/Env
<i>Cirsium vulgare</i>	Spear Thistle	S	E/N/RC
<i>Cyperus eragrostis</i>	Drain Flat-sedge	Se/Ru	E/Env
<i>Dactylis glomerata</i>	Orchard Grass	G	E/Env
<i>Echium plantagineum</i>	Paterson's Curse	H	E/N/RC
<i>Ehrharta erecta</i>	Panic-veldt Grass	G	E/Env
<i>Eleocharis acuta</i>	Common Spike-rush	Se/Ru	NV
<i>Ficinia nodosa</i>	Knobbly Club Rush	Se/Ru	NV
<i>Fraxinus angustifolia</i>	Narrow-leaved Ash	T	E/Env
<i>Galium aparine</i>	Cleavers	H	E/Env
<i>Genista monspessulana</i>	Montpellier Broom	S	E
<i>Geranium dissectum</i>	Cut-leaved Crane's Bill	H	E/Env
<i>Holcus lanatus</i>	Yorkshire Fog	G	E/Env
<i>Hypochaeris radicata</i>	Common Cat's Ear	H	E/Env
<i>Juncus effusus</i> subsp. <i>effusus</i>	Common Rush	Se/Ru	E/Env
<i>Juncus pallidus</i>	Great Soft-rush	Se/Ru	NV
<i>Lotus subbiflorus</i>	Hairy Birds-foot Trefoil	H	E/Env
<i>Melaleuca ericifolia</i>	Swamp Paperbark	S	I
<i>Oxalis pes-caprae</i>	Soursob	H	E//N/R
<i>Ozothamnus ferrugineus</i>	Tree Everlasting	S	N
<i>Paspalum distichum</i>	Water Couch	G	E/Env
<i>Phalaris aquatica</i>	Toowoomba Canary-grass	G	E/Env
<i>Phleum pratense</i>	Timothy Grass	G	E/Env
<i>Plantago lanceolata</i>	Ribwort Plantain	H	E/Env
<i>Prunus</i> sp.	Plum	T	E/Env
<i>Rubus fruticosus</i> L. agg	Blackberry	S	E/N/RC
<i>Rumex Crispus</i>	Curly Dock	H	E/Env

Scientific name	Common name	Life Form	Notes
<i>Rumex obtusifolius</i>	Bitter Dock	H	E/Env
<i>Schoenus apogon</i>	Common Bog-Rush	Se/Ru	I
<i>Sonchus oleraceus</i>	Common Sow-thistle	H	E/Env
<i>Trifolium repens</i>	White Clover	H	E/Env
<i>Triglochin procera</i>	Water Ribbons	Se/Ru	I
<i>Vicia sativa</i>	Common Vetch	H	E/Env

APPENDIX D. FAUNA

Table 10 below lists all fauna recorded within the study area at the time of the site assessment.

Table 10. List of all fauna directly observed within the study area at the site assessment.

Species name	Common name	Species type	Location	Origin	Count
<i>Cracticus tibicen</i>	Magpie	Bird	Adjacent to site	Native	2
<i>Grallina cyanoleuca</i>	Magpie-lark	Bird	On site	Native	1
<i>Cisticola exilis</i>	Golden-headed Cisticola	Bird	On site	Native	6
<i>Elseyornis melanops</i>	Black-fronted Dotterel	Bird	On site	Native	1
<i>Egretta novaehollandiae</i>	White-faced Heron	Bird	On site	Native	6
<i>Falco cenchroides</i>	Nankeen Kestrel	Bird	Flying over site	Native	2
<i>Threskiornis spinicollis</i>	Straw-necked Ibis	Bird	Flying over site	Native	1
<i>Elanus axillaris</i>	Black-shouldered Kite	Bird	Flying over site	Native	1
<i>Alauda arvensis</i>	Eurasian Skylark	Bird	Adjacent to site	Introduced	2

No rare or threatened faunal species were observed within the assessment area during the site analysis.

APPENDIX E. POTENTIAL IMPACTS TO SIGNIFICANT FLORA & FAUNA (5KM RADIUS)

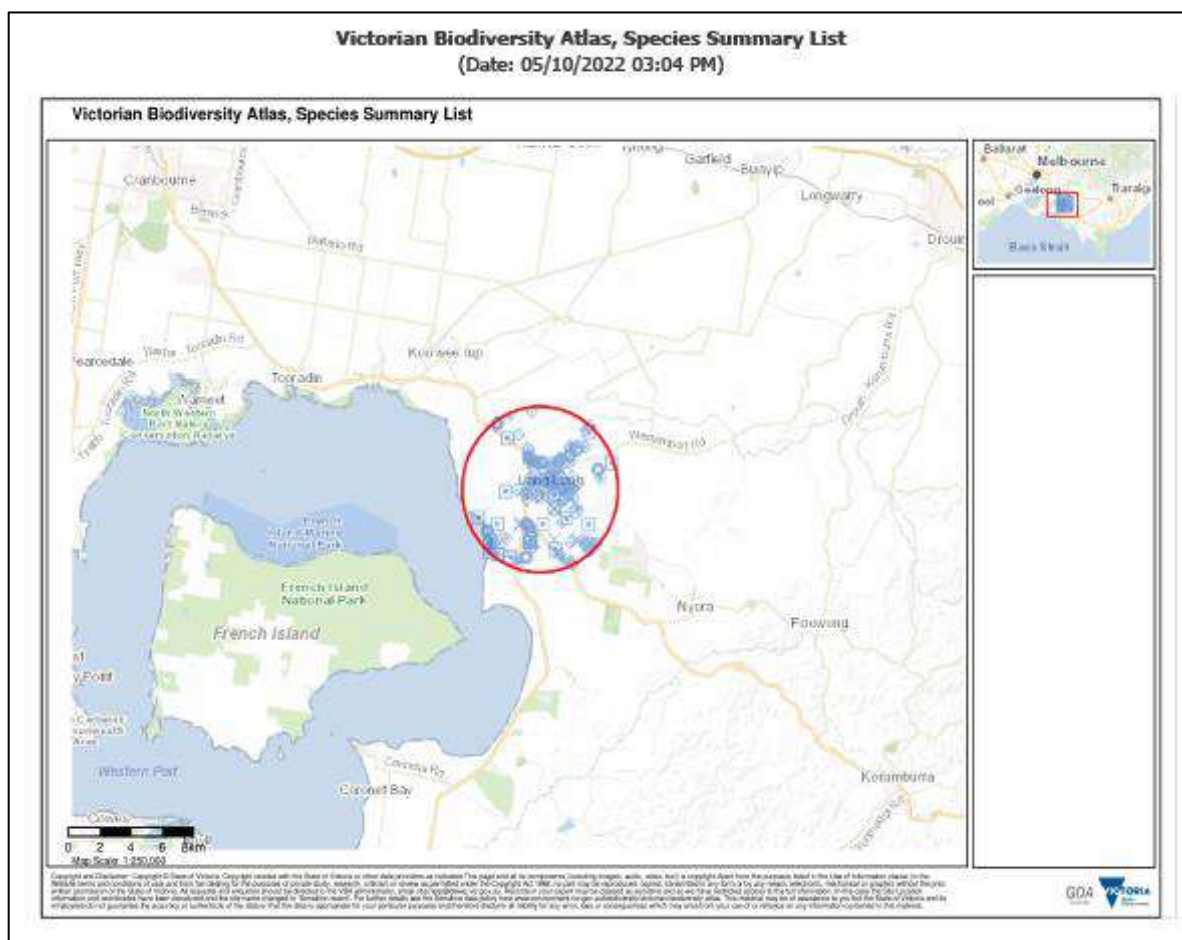


Figure 4. Extract Victorian Biodiversity Atlas, Species Summary List, Fauna, dated 5/10/2022.

Selected Area
 Type: Buffer Base point: POINT (145.55747846598 -38.27137052509211) Within: 5000 metres

Common Filter

Scientific Name : Common Name :
 VBA Taxon ID : Conservation Status : EPBC, FFG
 Taxon Level : Species Taxon Type :
 Other Agency Codes : Discipline : Terrestrial fauna
 Date Since : (dd/mm/yyyy) Date To : (dd/mm/yyyy)

Last Review Date: 05 Oct 2022

Taxon ID	Scientific Name	Common Name	FFG Status	Conservation Status	Discipline	Taxon Origin	Short Name	Count of Sightings	Last Record
4686	Prototroctes maraena	Australian Grayling	Endangered	VU en	Aquatic fauna, Aquatic Invertebrates, Terrestrial fauna, Coastal		pro mar	5	12/05/2011
10012	Synolcus chinensis	King Quail	Endangered	en	Terrestrial fauna			3	02/08/1901
10020	Pedionomus torquatus	Plains-wanderer	Critically Endangered	CR cr	Terrestrial fauna			1	01/01/1930
10112	Hydroprogne caspia	Caspian Tern	Vulnerable	vu	Terrestrial fauna, Coastal			1	27/10/1979
10149	Numerius madagascariensis	Eastern Curlew	Critically Endangered	CR cr	Terrestrial fauna, Coastal			2	27/10/1979
10161	Calidris	Curlew	Critically	CR cr	Terrestrial fauna, Coastal			4	27/10/1979

<https://vba.dse.vic.gov.au/vba/index.jsp>

Figure 5. Extract Victorian Biodiversity Atlas. Species Summary List. Fauna, dated 5/10/2022.

Figure 7. Extract - Victorian Biodiversity Atlas, Species Summary List, Flora, Dated 5/10/2022.

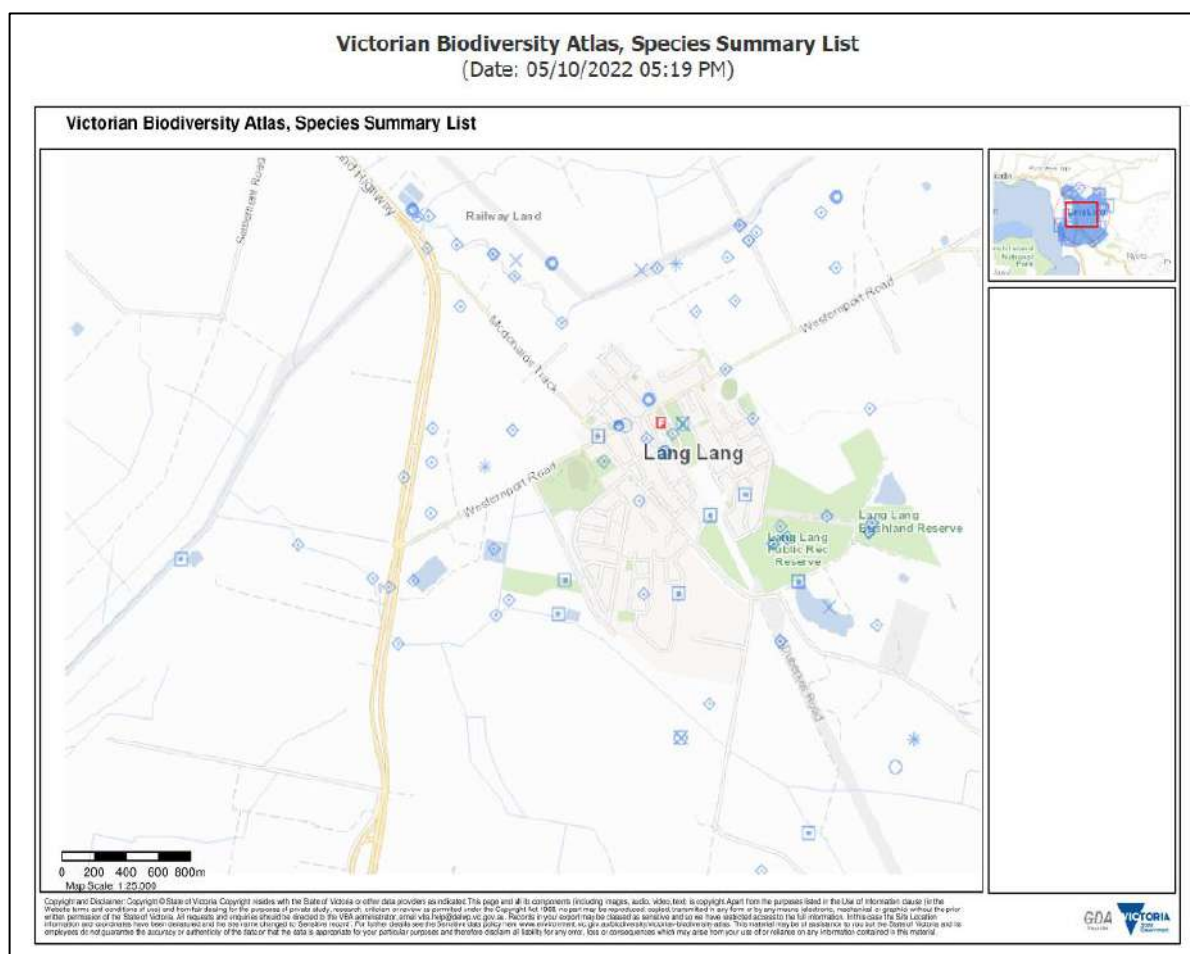


Figure 7. Extract - Victorian Biodiversity Atlas, Species Summary List, Flora, Dated 5/10/2022.

Selected Area

Type: Buffer Base point: POINT (145.55749897128305 -38.271078461406326) Within: 5000 metres

Common Filter

Scientific Name :

Common Name :

VBA Taxon ID :

Conservation Status : EPBC, FFG

Taxon Level : Species

Taxon Type :

Other Agency Codes :

Discipline : Flora

Date Since :

(dd/mm/yyyy)

Date To :

(dd/mm/yyyy)

Last Review Date:05 Oct 2022

Taxon ID	Scientific Name	Common Name	FFG Status	Conservation Status	Discipline	Taxon Origin	Short Name	Count of Sightings	Last Record
500326	Atriplex paludosa subsp. paludosa	Marsh Saltbush	Endangered	en	Flora		Atri palu	2	12/02/2002
500835	Corybas aconitiflorus	Spurred Helmet-orchid	Endangered	en	Flora		Cory acon	1	11/11/1991
503694	Caladenia oenochila	Wine-lipped Spider-orchid	Critically Endangered	cr	Flora		Cala oeno	1	29/09/1932
504290	Billardiera scandens s.s.	Velvet Apple-berry	Endangered	en	Flora		Bill sc.ss	1	01/12/1976
504419	Dianella longifolia var. grandis s.l.	Glaucous Flax-lily	Critically Endangered	cr	Flora		Dian lo.g	1	10/08/2001

Figure 8. Extract - Victorian Biodiversity Atlas, Species Summary List, Flora within 5km, Dated 5/10/2022.

APPENDIX F. POTENTIAL IMPACTS TO SIGNIFICANT FLORA & FAUNA (5KM RADIUS)

NB. Where some likelihood of impact is determined, the species has been highlighted as per below and recommended mitigation measures and/or further information has been provided.

HIGH	MODERATE	LOW	FUTURE CONSIDERATION
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Threatened Ecological Communities – EPBC Act 1999

Table 11. Types of threatened ecological communities which may be present in the assessment site, their status and likelihood of impact.

Ecological Community	Status	Likelihood of Impact
Natural Damp Grassland of the Victorian Coastal Plains	Critically endangered	Whilst there was a possibility this ecological community might be present within the site, the species likely to be present in this ecological community were not observed in field assessment. Ecological community was not observed on site during field assessment. Small patches within the site did not meet key diagnostic characteristics and condition thresholds within Approved Conservation Advice for this community.
Subtropical and Temperate Coastal Saltmarsh	Vulnerable	Not likely to be present and therefore unlikely to be impacted upon. The species likely to be present in this ecological community were not observed in field assessment. Ecological community was not observed on site during field assessment.

Threatened Fauna Species– EPBC Act 1999

Table 12. Types of threatened bird species which may be present in the assessment site, their status and likelihood of impact.

Species	Status	Likelihood of Impact
Regent Honeyeater [82338] – <i>Anthochaera phyrgia</i>	Critically endangered	Unlikely to be impacted upon. May occur however no individuals of this species were observed in field assessment. No sightings have been recorded on VBA within a 5km radius of the site. Key areas for conservation, not in local area of site and suitable habitat such as Eucalypts or woodlands observed within the site (<i>Also protected under FFG Act 1988</i>).
White-throated Needletail [682] – <i>Hirundapus caudacutus</i>	Vulnerable	Unlikely to be present or impacted upon. No individuals of this species were observed in field assessment. No sightings recorded on VBA within a 5km radius of the site since 1974 and very limited habitat observed within the site for this species (<i>Also protected under FFG Act 1988</i>).
Red Knot, Knot [855] – <i>Calidris canutus</i>	Endangered	Unlikely to be present or impacted upon. Migratory bird from Siberia to sandy coastal inlets. No sightings have been recorded within 5km of the study area according to VBA. Very limited suitable habitat for this species was observed within the site – show preference for sandy estuaries (<i>Also protected under FFG Act 1988</i>).
Great Knot [862] <i>Calidris tenuirostris</i>	Critically Endangered	Unlikely to be present or impacted upon. The habitat which supports this species has not been observed at the assessment site. Shows preference for mudflats and sandflats in sheltered coasts and often roost on beaches or nearby low vegetation. No individuals of this species were observed during field assessment. Recorded sightings listed on VBA in 1974 have been located at a distance greater than 4km from the site. (<i>Also protected under FFG Act 1988</i>).
Indian Yellow-nosed Albatross [64464] – <i>Thalassarche carteri</i>	Vulnerable	Unlikely to be present or impacted upon. No sightings have been recorded on VBA within 5km of the site. No suitable habitat for this species was observed within the site (seabird). (<i>Also protected under FFG Act 1988</i>).

Species	Status	Likelihood of Impact
Shy Albatross [89224] – <i>Thalassarche cauta</i>	Endangered	Unlikely to be present or impacted upon. No sightings have been recorded on VBA within 5km of the site. No suitable habitat for this species was observed within the site (seabird). (Also protected under FFG Act 1988).
Greater Sand Plover, Large Sand Plover [877] – <i>Charadrius leschenaultii</i>	Vulnerable	Unlikely to be present or impacted upon. No sightings have been recorded on VBA within 5km of the site. No suitable habitat for this species was observed within the site, as shows preference for sheltered, sandy, shelly or muddy beaches, estuaries, rocky islands etc. (Also protected under FFG Act 1988).
Lesser Sand Plover, Mongolian Plover [879] – <i>Charadrius mongolus</i>	Endangered	Unlikely to be present or impacted upon. No sightings have been recorded on VBA within 5km of the site. No suitable habitat for this species was observed within the site, as shows preference for sheltered, sandy, shelly or muddy beaches, estuaries, rocky islands etc. (Also protected under FFG Act 1988).
Antipodean Albatross [64458] – <i>Diomedea antipodensis</i>	Vulnerable	Unlikely to be present or impacted upon. No sightings have been recorded on VBA within 5km of the site. No suitable habitat for this species was observed within the site (seabird).
Gibson's Albatross [82270] - <i>Diomedea antipodensis gibsoni</i>	Vulnerable	Unlikely to be present or impacted upon. No sightings have been recorded on VBA within 5km of the site. No suitable habitat for this species was observed within the site (seabird).
Southern Royal Albatross [89221] - <i>Diomedea epomephora</i>	Vulnerable	Unlikely to be present or impacted upon. No sightings have been recorded on VBA within 5km of the site. No suitable habitat for this species was observed within the site (seabird). (Also protected under FFG Act 1988).
Northern Royal Albatross [64456] - <i>Diomedea sanfordi</i>	Endangered	Unlikely to be present or impacted upon. No sightings have been recorded on VBA within 5km of the site. No suitable habitat for this species was observed within the site (seabird).
White-bellied Storm-Petrel (Tasman Sea), White-bellied Storm-Petrel (Australasian) [64438] - <i>Fregetta grallaria grallaria</i>	Vulnerable	Unlikely to be present or impacted upon. No sightings have been recorded on VBA within 5km of the site. No suitable habitat for this species was observed within the site (seabird). (Also protected under FFG Act 1988).
Nunivak Bar-tailed Godwit, Western Alaskan Bar-tailed Godwit [86380] – <i>Limosa lapponica baueri</i>	Vulnerable	Unlikely to be present or impacted upon. No sightings have been recorded on VBA within 5km of the site. No suitable habitat for this species was observed within the site. Show preference for estuarine mudflats, beaches and mangroves.
Southern Giant Petrel [1060] – <i>Macronectes giganteus</i>	Endangered	Unlikely to be present or impacted upon. No sightings have been recorded on VBA within 5km of the site. No suitable habitat for this species was observed within the site (seabird). (Also protected under FFG Act 1988).
Northern Giant Petrel [1061] – <i>Macronectes halli</i>	Vulnerable	Unlikely to be present or impacted upon. No sightings have been recorded on VBA within 5km of the site. No suitable habitat for this species was observed within the site (seabird). (Also protected under FFG Act 1988).
Wandering Albatross [89223] – <i>Diomedea exulans</i>	Vulnerable	Unlikely to be present or impacted upon. No sightings have been recorded on VBA within 5km of the site. No suitable habitat for this species was observed within the site (seabird). (Also protected under FFG Act 1988).
Orange-bellied Parrot [747] - <i>Neophema chrysogaster</i>	Critically Endangered	Unlikely to be present or impacted upon. No sightings have been recorded on VBA within 5km of the site since 1974. Limited available habitat for this species was observed within the site, as shows preference for saltmarshes, heathlands and low shrublands, and shorter grassed areas such as golf courses. (Also protected under FFG Act 1988).

Species	Status	Likelihood of Impact
Fairy Prion (Southern) [64445] – <i>Pachyptila turtur subantarctica</i>	Vulnerable	Unlikely to be present or impacted upon. No sightings have been recorded on VBA within 5km of the site. No suitable habitat for this species was observed within the site (small seabird).
Pilot Bird [525] – <i>Picnoptilus floccosus</i>	Vulnerable	Unlikely to be present or impacted upon. May occur however no individuals of this species were observed in field assessment or in previous surveys. Often favours wet forested areas. No sightings have been recorded on VBA within 5km of the site.
Australian Fairy-tern [82950] – <i>Sternula tereis tereis</i>	Vulnerable	Unlikely to be present or impacted upon. No sightings have been recorded on VBA within 5km of the site. Very limited suitable foraging habitat for this species was observed within the site, as shows preference for coastal beaches, sheltered inlets, estuaries and lagoons etc. (Also protected under FFG Act 1988).
Buller's Albatross, Pacific Albatross [64460] - <i>Thalassarche bulleri</i>	Vulnerable	Unlikely to be present or impacted upon. No sightings have been recorded on VBA within 5km of the site. No suitable habitat for this species was observed within the site (seabird). (Also protected under FFG Act 1988).
Northern Buller's Albatross, Pacific Albatross [82273] - <i>Thalassarche bulleri platei</i>	Vulnerable	Unlikely to be present or impacted upon. No sightings have been recorded on VBA within 5km of the site. No suitable habitat for this species was observed within the site (seabird).
Grey-headed Albatross [66491] <i>Thalassarche chrysostoma</i>	Endangered	Unlikely to be present or impacted upon. No sightings have been recorded on VBA within 5km of the site. No suitable habitat for this species was observed within the site (seabird). (Also protected under FFG Act 1988).
Campbell Albatross, Campbell Black-browed Albatross [64459] <i>Thalassarche impavida</i>	Vulnerable	Unlikely to be present or impacted upon. No sightings have been recorded on VBA within 5km of the site. No suitable habitat for this species was observed within the site (seabird).
Black-browed Albatross [66472] <i>Thalassarche melanophris</i>	Vulnerable	Unlikely to be present or impacted upon. No sightings have been recorded on VBA within 5km of the site. No suitable habitat for this species was observed within the site (seabird).
White-capped Albatross [64462] <i>Thalassarche steadi</i>	Vulnerable	Unlikely to be present or impacted upon. No sightings have been recorded on VBA within 5km of the site. No suitable habitat for this species was observed within the site (seabird).
Salvin's Albatross [64463] – <i>Thalassarche salvini</i>	Vulnerable	Unlikely to be present or impacted upon. No sightings have been recorded on VBA within 5km of the site. No suitable habitat for this species was observed within the site (seabird).
Sooty Albatross [1075] – <i>Phoebastria fusca</i>	Vulnerable	Unlikely to be present or impacted upon. No sightings have been recorded on VBA within 5km of the site. No suitable habitat for this species was observed within the site (seabird). (Also protected under FFG Act 1988).
Swift Parrot [744] – <i>Lathamus discolor</i>	Critically endangered	Unlikely to be present or impacted upon. This species shows preference for Ironbark, Tasmanian Blue Gum and other species which have not been observed on site. No sightings have been recorded on VBA within 5km of the site. (Also protected under FFG Act 1988).
Botaurus poiciloptilus [1001] <i>Australasian Bittern</i>	Endangered	Unlikely to be present or impacted upon. The habitat which supports this species has not been observed at the assessment site. No individuals of this species were observed in field assessment and there have not been any recorded sightings on VBA within 5km of the study area. The species typically occurs along rivers, pools, lakes and swamps. (Also protected under FFG Act 1988).

Species	Status	Likelihood of Impact
Curlew Sandpiper [856] <i>Calidris ferruginea</i>	Critically Endangered	Unlikely to be present or impacted upon. Shows preference for mudflats, mangroves, beaches etc. No individuals of this species were observed during field assessment. No recorded sightings within 5km of the site since 1979 and further research confirmed these sightings were located further than 3km from the site. Very limited suitable habitat observed within the study area (Also protected under FFG Act 1988).
Grey Falcon [929] <i>Falcon hypoleucos</i>	Vulnerable	Unlikely to be impacted upon. The habitat which supports this species has not been observed at the assessment site. Unlikely to be found south of the Great Dividing Range. No individuals of this species were observed during field assessment and no sightings have been recorded within 5km of the site on VBA. (Also protected under FFG Act 1988).
Eastern Curlew [847] <i>Numenius madagascariensis</i>	Critically Endangered	Unlikely to be present or impacted upon. The habitat which supports this species has not been observed at the assessment site. Shows preference for mudflats, mangroves, beaches etc. No individuals of this species were observed during field assessment. Recent sightings which have been recorded on VBA in 1979 have been located at a distance greater than 3km from the site. (Also protected under FFG Act 1988).
Australian Painted Snipe [77037] <i>Rostratula australis</i>	Endangered	Unlikely to be impacted upon as the habitat which supports this species has not been observed at the assessment site. No individuals of this species were observed in field assessment. More likely to be seen near the Murray Darling basin. No individuals of this species were observed during field assessment and no sightings have been recorded within 5km of the site on VBA. (Also protected under FFG Act 1988).
Gang Gang Cockatoo [768] <i>Callocephalon fimbriatum</i>	Endangered	Unlikely to be present or impacted upon. No individuals of this species were observed during field assessment and no sightings have been recorded within a 5km radius of the site since 1980. Shows preference for higher elevations and suburban gardens. No suitable habitat for foraging or roosting was observed within the study area.
Painted Honeyeater [470] <i>Grantiella picta</i>	Vulnerable	Unlikely to be present or impacted upon. No individuals of this species were observed during field assessments and no sightings have been recorded on VBA within a 5km radius of the site. Often associated with Mistletoe, of which none was observed on site. (Also protected under FFG Act 1988).
Fork-tailed Swift [678] - <i>Apus pacificus</i>	No approved conservation advice.	Unlikely to be present or impacted upon. Migratory species of bird which prefers to breed in natural rock crevices, caves etc. No individuals of this species were observed during field assessment. No sightings have been recorded on VBA within a 5km radius of the site.
Little Tern [82849] – <i>Sternula albifrons</i>	No approved conservation advice.	Unlikely to be present or impacted upon. No sightings have been recorded on VBA within 5km of the site. Very limited suitable foraging habitat for this species was observed within the site, as shows preference for coastal beaches, sheltered inlets, estuaries and lagoons etc. (Also protected under FFG Act 1988).
Flesh-footed Shearwater, Flesh-footed Shearwater [82404] - <i>Ardenna carneipes</i>	No approved conservation advice.	Unlikely to be present or impacted upon. No sightings have been recorded on VBA within 5km of the site. No suitable habitat for this species was observed within the site (seabird).
Sooty Shearwater [82651] - <i>Ardenna grisea</i>	No approved conservation advice.	Unlikely to be present or impacted upon. No sightings have been recorded on VBA within 5km of the site. No suitable habitat for this species was observed within the site (seabird).
Yellow Wagtail [644] – <i>Motacilla flava</i>	No approved conservation advice.	Unlikely to be present or impacted upon. Whilst some areas of the site may present potentially suitable habitat for this species, no sightings have been recorded on VBA within 5km of the site. Favours wet meadows, marshland, grassy and muddy lakeshores. Can occur in fields and often near livestock during migration.

Species	Status	Likelihood of Impact
Satin Flycatcher [612] – <i>Myiagra cyanoleuca</i>	No approved conservation advice.	Unlikely to be present or impacted upon. No sightings have been recorded on VBA within 5km of the site. The Satin Flycatcher is found in tall forests, preferring wetter habitats such as heavily forested gullies.
Rufous Fantail [592] – <i>Rhipidura rufifrons</i>	No approved conservation advice.	Unlikely to be present or impacted upon. No sightings have been recorded on VBA within 5km of the site. Prefers swamp woodlands and wet forests. Very limited suitable habitat for this species observed within the site.
Sharp-tailed Sandpiper [874] – <i>Calidris acuminata</i>	No approved conservation advice.	Unlikely to be present or impacted upon. No sightings have been recorded on VBA within 5km of the site. Very limited suitable habitat for this species was observed within the site.
Common Sandpiper [59309] – <i>Actitis hypoleucos</i>	No approved conservation advice.	Unlikely to be present or impacted upon. No sightings have been recorded on VBA within 5km of the site. Very limited suitable habitat for this species was observed within the site (<i>Also protected under FFG Act 1988</i>).
Pectoral Sandpiper [858] – <i>Calidris melanotos</i>	No approved conservation advice.	Unlikely to be present or impacted upon. No sightings have been recorded on VBA within 5km of the site. Very limited suitable habitat for this species was observed within the site.
Red-necked Stint [860] – <i>Calidris ruficollis</i>	No approved conservation advice.	Unlikely to be present or impacted upon. No sightings have been recorded on VBA within 5km of the site. Very limited suitable habitat for this species was observed within the site.
Double-banded Plover [895] – <i>Charadrius bicinctus</i>	No approved conservation advice.	Unlikely to be present or impacted upon. No sightings have been recorded on VBA within 5km of the site. Very limited suitable habitat for this species was observed within the site.
Latham's Snipe, Japanese Snipe [863] – <i>Gallinago hardwickii</i>	No approved conservation advice.	Unlikely to be present or impacted upon. No sightings have been recorded on VBA within 5km of the site. Very limited suitable habitat for this species was observed within the site as generally within dense cover.
Ruddy Turnstone [872] – <i>Arenaria interpres</i>	No approved conservation advice.	Unlikely to be present or impacted upon. No sightings have been recorded on VBA within 5km of the site. No suitable habitat for this species was observed within the site. Shows preference for exposed rocks on reefs along the coastline (<i>Also protected under FFG Act 1988</i>).
Little Curlew, Little Whimbrel [848] – <i>Numenius minutus</i>	No approved conservation advice.	Unlikely to be present or impacted upon. No sightings have been recorded on VBA within 5km of the site. Very limited suitable habitat for this species was observed within the study area.
Whimbrel [849] – <i>Numenius phaeopus</i>	No approved conservation advice.	Unlikely to be present or impacted upon. No sightings have been recorded on VBA within 5km of the site. No suitable habitat for this species was observed within the site as mainly found on the coast. (<i>Also protected under FFG Act 1988</i>).
Pacific Golden Plover [25545] – <i>Pluvialis fulva</i>	No approved conservation advice.	Unlikely to be present or impacted upon. No sightings have been recorded on VBA within 5km of the site. Very limited suitable habitat for this species was observed within the study area, and is not a common visitor to Australia (<i>Also protected under FFG Act 1988</i>).
Grey Plover [865] – <i>Pluvialis squatarola</i>	No approved conservation advice.	Unlikely to be present or impacted upon. No sightings have been recorded on VBA within 5km of the site. No suitable habitat for this species was observed within the study area as shows preference for sandy beaches and rocky coasts. <i>Also protected under FFG Act 1988</i> .

Species	Status	Likelihood of Impact
Grey-tailed Tattler [851] – <i>Tringa brevipes</i>	No approved conservation advice.	Unlikely to be present or impacted upon. No sightings have been recorded on VBA within 5km of the site. No suitable habitat for this species was observed within the study area, as usually seen in small flocks on sheltered coasts with reefs and rock platforms or with intertidal mudflats (<i>Also protected under FFG Act 1988</i>).
Swinhoe's Snipe [864] – <i>Gallinago megala</i>	No approved conservation advice.	Unlikely to be present or impacted upon. No sightings have been recorded on VBA within 5km of the site. Very limited suitable habitat for this species was observed within the study area.
Pin-tailed Snipe [841] – <i>Gallinago stenura</i>	No approved conservation advice.	Unlikely to be present or impacted upon. No sightings have been recorded on VBA within 5km of the site. Very limited suitable habitat for this species was observed within the study area.
Broad-billed Sandpiper [842] – <i>Limicola falcinellus</i>	No approved conservation advice.	Unlikely to be present or impacted upon. No sightings have been recorded on VBA within 5km of the site. Very limited suitable habitat for this species was observed within the study area. When in Australia, this species is most commonly seen feeding and roosting in estuarine mudflats, saltmarshes, and reefs.
Terek Sandpiper [59300] – <i>Xenus cinereus</i>	No approved conservation advice.	Unlikely to be present or impacted upon. No sightings have been recorded on VBA within 5km of the site. No suitable habitat for this species was observed within the study area. The species is commonly found on the coast in mangrove swamps, tidal mudflats and the seashore. (<i>Also protected under FFG Act 1988</i>).
Wandering Tattler [831] – <i>Tringa incana</i>	No approved conservation advice.	Unlikely to be present or impacted upon. No sightings have been recorded on VBA within 5km of the site. Very limited suitable habitat for this species was observed within the study area, as usually seen along the coast.
Bar-tailed Godwit [844] – <i>Limosa lapponica</i>	No approved conservation advice.	Unlikely to be present or impacted upon. No sightings have been recorded on VBA within 5km of the site. Very limited suitable habitat for this species was observed within the study area, as usually seen along the coast. The species tends to inhabit estuarine mudflats, beaches and mangroves. They are more common in coastal areas around Australia. (<i>Also protected under FFG Act 1988</i>).
Wood Sandpiper [829] – <i>Tringa glareola</i>	No approved conservation advice.	Unlikely to be present or impacted upon. No sightings have been recorded on VBA within 5km of the site. Very limited suitable habitat for this species was observed within the study area, as usually show preference for ponds surrounded by tall plants. (<i>Also protected under FFG Act 1988</i>).
Common Greenshank, Greenshank [832] – <i>Tringa nebularia</i>	No approved conservation advice.	Unlikely to be present or impacted upon. No sightings have been recorded on VBA within 5km of the site. Very limited suitable habitat for this species was observed within the study area, although can be found along the shore and inland. (<i>Also protected under FFG Act 1988</i>).
Marsh Sandpiper, Little Greenshank [833] – <i>Tringa stagnatilis</i>	No approved conservation advice.	Unlikely to be present or impacted upon. No sightings have been recorded on VBA within 5km of the site. Very limited suitable habitat for this species was observed within the study area, although can be found along the shore and inland. (<i>Also protected under FFG Act 1988</i>).
Red-capped Plover [881] – <i>Charadrius ruficapillus</i>	No approved conservation advice.	Unlikely to be present or impacted upon. No sightings have been recorded on VBA within 5km of the site. Very limited suitable habitat for this species was observed within the site – prefers saline and brackish waters (<i>Also protected under FFG Act 1988</i>).
Rainbow Bee-eater [670] – <i>Merops ornatus</i>	No approved conservation advice.	Unlikely to be present or impacted upon. No sightings have been recorded on VBA within 5km of the site. Very limited suitable habitat for this species was observed within the site. Shows preference for open forests– often associated with orchards, vineyards and remnant vegetation within farmlands.

Species	Status	Likelihood of Impact
White-bellied Sea Eagle [943] – <i>Haliaeetus leucogaster</i>	No approved conservation advice.	Unlikely to be present or impacted upon. No sightings have been recorded on VBA within 5km of the site. No suitable habitat for this species was observed within the site. The site provides limited resources for this species, as it is highly adapted to hunt in marine and aquatic environments. (Also protected under FFG Act 1988).
Pied Stilt, Black-winged Stilt [870] – <i>Himantopus himantopus</i>	No approved conservation advice.	Unlikely to be present or impacted upon. No sightings have been recorded on VBA within 5km of the site. Very limited suitable habitat for this species was observed within the site.
Red-necked Avocet [871] – <i>Recurvirostra novaehollandiae</i>	No approved conservation advice.	Unlikely to be present or impacted upon. No sightings have been recorded on VBA within 5km of the site. Very limited suitable habitat for this species was observed within the site.
Blue-winged Parrot [726] – <i>Neophema chrysostoma</i>	No approved conservation advice.	Unlikely to be present or impacted upon. No sightings have been recorded on VBA within 5km of the site. Very limited suitable habitat for this species was observed within the site.

Table 13. Types of threatened frog species which may be present in the assessment site, their status and likelihood of impact.

Species	Status	Likelihood of Impact
Frogs - Growling Grass Frog, Southern Bell Frog, Green and Golden Frog, Warty Swamp Frog, Golden Bell Frog [1828] – <i>Litoria raniformis</i>	Vulnerable	Unlikely to be present or impacted upon. No individuals of this species were observed during field assessment and no frog calls were heard. White potentially suitable habitat may be present within the site, no recorded sightings are listed within VBA within 5km of the site since 1975. Therefore, it this species is unlikely to be present within the site and on this occasion, in my opinion it is unlikely a targeted survey should be recommended. (Also protected under FFG Act 1988).

Table 14. Types of threatened arboreal and terrestrial mammal species which may be present in the assessment site, their status and likelihood of impact.

Species	Status	Likelihood of Impact
Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (southeastern mainland population) [75184] - <i>Dasyurus maculatus maculatus</i> (SE mainland population)	Endangered	Unlikely to be present or impacted upon. The habitat which supports this species has not been observed at the assessment site – the site is too open. No recorded sightings on VBA within 5km. No individuals of this species were observed during field assessment. (Also protected under FFG Act 1988).
Grey-headed Flying-fox [186] - <i>Pteropus poliocephalus</i>	Vulnerable	Unlikely to be present or impacted upon. Shows preference for forests, woodlands (treed areas) and intertidal mangroves, however can persist in urbanised areas. No individuals of this species were observed during field assessment. No recorded sightings on VBA within 5km of the site. (Also protected under FFG Act 1988).
Swamp Antechinus (mainland) [83086] – <i>Antechinus minimus maritimus</i>	Vulnerable	Unlikely to be present or impacted upon. No individuals of this species were observed during field assessment. Very limited suitable habitat observed within the site for the survival of this species. No sightings recorded on VBA within 5km. (Also protected under FFG Act 1988).
Southern Brown Bandicoot (southern), Southern Brown Bandicoot (south eastern) [68050] – <i>Isodon obesulus obesulus</i>	Endangered	Unlikely to be present or impacted upon. The site does not provide suitable habitat for the persistence of this species due to lack of understory scrub and shrubbery. No recorded sightings within 5km of the study area according to VBA since 1970 (Also protected under FFG Act 1988).

Species	Status	Likelihood of Impact
Yellow-bellied Glider (south eastern) [87600] – <i>Petaurus australis australis</i>	Vulnerable	Unlikely to be present or impacted upon. No individuals of this species were observed during field assessment. No habitat not observed within the site – found in woodlands and forests. No sightings recorded on VBA within 5km. (Also protected under FFG Act 1988).
Long-nosed Potoroo (southern mainland) [86367] – <i>Potorous tridactylus trisulcatus</i>	Vulnerable	Unlikely to be present or impacted upon. No individuals of this species were observed during field assessment. Limited suitable habitat not observed within the site due to lack of thick understory. No sightings recorded on VBA within 5km.
Greater Glider (southern and central) [87600] – <i>Petauroides volans</i>	Endangered	Unlikely to be present or impacted upon. No individuals of this species were observed during field assessment. No habitat not observed within the site – found in woodlands and forests. No sightings recorded on VBA within 5km. (Also protected under FFG Act 1988).

Table 15. Types of threatened reptile species which may be present in the assessment site, their status and likelihood of impact.

Species	Status	Likelihood of Impact
Loggerhead Turtle [1763] <i>Caretta caretta</i>	Endangered	Unlikely to be present or impacted upon. No individuals of this species were observed during field assessment. Suitable habitat not observed within the site. No sightings recorded on VBA within 5km.
Green Turtle [1765] - <i>Chelonia mydas</i>	Vulnerable	Unlikely to be present or impacted upon. No individuals of this species were observed during field assessment. Suitable habitat not observed within the site. No sightings recorded on VBA within 5km.
Leatherback Turtle, Leathery Turtle, Luth [1768] - <i>Dermochelys coriacea</i>	Endangered	Unlikely to be present or impacted upon. No individuals of this species were observed during field assessment. Suitable habitat not observed within the site. No sightings recorded on VBA within 5km. (Also protected under FFG Act 1988).

Table 16. Types of threatened fish species which may be present in the assessment site, their status and likelihood of impact.

Species	Status	Likelihood of Impact
Eastern Dwarf Galaxias [56790] <i>Galaxiella pusilla</i>	Vulnerable	Low likelihood of presence or impact. The study area is unlikely to provide suitable habitat within the drainage line/channel as this connects to Adams Creek and Lang Lang River (coastal), whereas this species' entire life cycle is undertaken within freshwater. As no recorded sightings on VBA within 5km of the study area, it is unlikely this species would be found within the study area (Also protected under FFG Act 1988).
Yarra Pygmy Perch [26177] – <i>Nannoperca obscura</i>	Vulnerable	Low likelihood of presence or impact due to very limited suitable habitat within the drainage line/channel to the east of the site (lack of riparian vegetation). No recorded sightings on VBA within 5km of the study area. Prefers emergent vegetation such as tall reeds. (Also protected under FFG Act 1988).
Australian Grayling [26170] – <i>Prototroctes maraena</i>	Vulnerable	Moderate likelihood of presence and/or impact. Drainage line/channel located to the west of the study area may have the potential to provide suitable habitat for this species. A count of 1 was recorded within approximately 1.6km from the site, in 2011. If the drainage line/channel is going to be impacted, further targeted analysis to determine the presence or absence of this species may be recommended. This drainage line/channel connects to Adams Creek and Lang Lang River and therefore, may provide connectivity for this species. (Also protected under FFG Act 1988).

Species	Status	Likelihood of Impact
Southern Blue-fin Tuna [69402] – <i>Thunnus maccoyii</i>	Conservation Dependent	Low likelihood of presence or impact as this species is an ocean/marine fish. No recorded sightings on VBA within 5km of the study area (Also protected under FFG Act 1988).
Blue Warehou [69374] – <i>Seriola lalandi</i>	Conservation Dependent	Low likelihood of presence or impact as this species is an ocean/marine fish. No recorded sightings on VBA within 5km of the study area (Also protected under FFG Act 1988).

Threatened Flora Species – EPBC Act 1999

Table 17. Types of threatened flora species which may be present in the assessment site, their status and likelihood of impact.

Species	Status	Likelihood of Impact
River Swamp Wallaby-grass, Floating Swamp Wallaby-grass [19215] - <i>Amphibromus fluitans</i>	Vulnerable	Low likelihood of presence or impact, due to the highly modified and disturbed nature of the site and number of introduced weed species. No individuals of this species were observed during the field assessment. No sightings have been recorded within VBA within 5km of the study area.
Matted Flax-lily [64886] - <i>Dianella amoena</i>	Endangered	Low likelihood of presence or impact, due to the highly modified and disturbed nature of the site, and number of introduced weed species. No individuals of this species were observed during the field assessment. No recorded sightings on VBA of this species within 5km of the study area. (Also protected under FFG Act 1988).
Clover Glycine, Purple Clover [13910] - <i>Glycine latrobeana</i>	Vulnerable	Low likelihood of presence or impact, due to the highly modified and disturbed nature of the site, and number of introduced weed species. No individuals of this species were observed during the field assessment. No recorded sightings of this species within 5km of the site. (Also protected under FFG Act 1988).
Green-striped Greenhood [56510] <i>Pterostylis chlorogramma</i>	Vulnerable	Low likelihood of presence or impact, due to the highly modified and disturbed nature of the site, and number of introduced weed species. No individuals of this species were observed during the field assessment. No recorded sightings of this species within 5km of the study area. (Also protected under FFG Act 1988).
Spiny Pepper-cress [10976] – <i>Lepidium aschersonii</i>	Vulnerable	Low likelihood of presence or impact in this area, due to highly disturbed and modified nature of the site, and number of introduced weed species. No individuals of this species were observed during field assessment. No recorded sightings within 5km radius of the study area. (Also protected under FFG Act 1988).
Eastern Spider Orchid [83410] – <i>Caladenia orientalis</i>	Endangered	Low likelihood of presence or impact due to highly disturbed and modified nature of the site. Range is located in coastal areas of the Southeast Coastal Plain interim bioregion. No recorded sightings within 5km radius of the site. (Also protected under FFG Act 1988).
Thick-lipped Spider-orchid, Daddy Long Legs [2119] – <i>Caladenia tessellata</i>	Vulnerable	Low likelihood of presence or impact in this area, due to highly disturbed and modified nature of the site, and number of introduced weed species. No individuals of this species were observed during field assessment. No recorded sightings within 5km radius of the study area.
Strzelecki Gum [55400] – <i>Eucalyptus strzeleckii</i>		Unlikely to be present or impacted upon. No Eucalypts were observed growing within the study area. No recorded sightings within 5km radius of the site. (Also protected under FFG Act 1988).
Dense Leek-orchid <i>Prasophyllum spicatum</i> [55146]	Vulnerable	Low likelihood of presence or impact. No individuals of this species were observed during site assessment. No recorded sightings within 5km radius of the study area. (Also protected under FFG Act 1988). Closest known populations are in Stony Point/Crib Point area.

Species	Status	Likelihood of Impact
Leafy Greenhood [15459] <i>Prasophyllum cucullata</i>	Vulnerable	Low likelihood of presence or impact, due to the highly modified and disturbed nature of the site, and number of introduced weed species. No individuals of this species were observed during the field assessment. No recorded sightings of this species within 5km of the study area. (Also protected under FFG Act 1988).
Swamp Fireweed, Smooth-fruited Groundsel [64976] - <i>Senecio psilocarpus</i>	Vulnerable	Low likelihood of presence or impact, due to the highly modified and disturbed nature of the site, and number of introduced weed species. No individuals of this species were observed during the field assessment. No recorded sightings of this species within 5km of the study area.
Metallic Sun-orchid [11896] <i>Thelymitra epipactoides</i>	Vulnerable	Low likelihood of presence or impact in this area, due to highly modified and disturbed nature of the site, and number of introduced weed species.. No individuals of this species were observed during field assessment. No recorded sightings within 5km radius of the study area. (Also protected under FFG Act 1988).
Swamp Everlasting, Swamp Paper Daisy [76215] - <i>Xerochrysum palustre</i>	Vulnerable	Low likelihood of presence or impact, due to the highly modified and disturbed nature of the site, and number of introduced weed species. No individuals of this species were observed during the field assessment. No recorded sightings of this species within 5km of the study area. (Also protected under FFG Act 1988).

POTENTIAL IMPACTS TO SIGNIFICANT FLORA & FAUNA

Protected Species Flora and Fauna Guarantee Act 1988

The potential fauna species which are protected under the *FFG Act 1988* which could be impacted upon are detailed below, in Table 18. This comprehensive list has been populated from recorded sightings within VBA, within 5km radius of the study area.

(Please note, species which have already been listed under the *EPBC Act 1999* have not been listed below. Their protection under the *FFG Act 1988* has been noted in the above tables.)

Table 18. Types of threatened species which may be present in the assessment site, their status and likelihood of impact.

Species	Status	Type	Likelihood of Impact
Plains Wanderer – <i>Pedionomus torquatus</i>	Critically Endangered on <i>FFG Act 1998</i>	Bird	Low likelihood of presence or impact. No individuals of this species were observed during field assessment. No recorded sightings within 5km of the study area since 1930. Lack of suitable habitat (native grasslands) within the site for this species to persist.
King Quail – <i>Synoicus chinensis</i>	Endangered on <i>FFG Act 1998</i>	Bird	Low likelihood of presence or impact. No individuals of this species were observed during field assessment. No recorded sightings within 5km of the study area since 1901. Lack of suitable habitat (shrubland) within the site for this species to persist.
Caspian Tern – <i>Hydroprogne caspia</i>	Vulnerable on <i>FFG Act 1998</i>	Bird	Unlikely to be present or impacted upon. No individuals of this species were observed during field assessment. A small count was recorded within 5km of the site in 1979, however further research determined this count was further than 3km from the site. Very limited suitable foraging habitat for this species was observed within the site, as shows preference for estuarine mudflats, floodwaters etc.

Species	Status	Type	Likelihood of Impact
Eastern Great Egret – <i>Ardrea alba modesta</i>	Endangered on FFG Act 1998	Bird	Low likelihood of presence or impact. No individuals of this species were observed during field assessment. Most recent sightings were in 2018, however this was at a distance greater than 3km from the site. Very limited suitable foraging habitat was observed within the site for this species. Shows preference for flowing, shallow water.
Little Egret – <i>Egretta garzetta</i>	Critically Endangered on FFG Act 1998	Bird	Low likelihood of presence or impact. No individuals of this species were observed during field assessment. Most recent sightings were in 1998, however this was at a distance greater than 1km from the site. Very limited suitable habitat for this species was observed within the site, as shows preference for tidal mudflats, saltwater and freshwater wetlands, and mangroves.
Black Falcon – <i>Falco subniger</i>	Critically Endangered on FFG Act 1998	Bird	Unlikely to be present or impacted upon. No individuals of this species were observed during field assessment. Show preference for nesting in tree-lined watercourses, requiring tall trees required for perching and roosting. No suitable habitat for this species was identified within the site. No recorded sightings within 5km of the site since 1974.
Hardhead - <i>Aythya australis</i>	Vulnerable FFG Act 1998	Bird	Low likelihood of presence or impact to this species. They are rarely seen on land and tend to roost on low branches and stumps near the water. They prefer deep, fresh open water and densely vegetated wetlands for breeding. No species were recorded during site assessments. A count of 1 was recorded within 1km of the site in 2003. Very limited suitable habitat for this species was observed within the site.
Southern Toadlet – <i>Pseudophryne semimarmorata</i>	Endangered on FFG Act 1998	Frog	Unlikely to be present or impacted upon. No individuals of this species were observed during field assessment and no frog calls were heard. No recorded sightings within 5km of the site since 1981. No suitable habitat was recorded on site, as shows preference for leaf litter and logs.
Musk Duck – <i>Biziura lobata</i>	Vulnerable on FFG Act 1998	Bird	Low likelihood of presence or impact to this species. Show preference for deep freshwater lagoons and dense reed beds. No individuals of this species were recorded during site assessments. No recorded sightings of this species within 5km of the site since 1981. Very limited suitable habitat for this species was observed within the site.
Glaucous Flax-lily – <i>Dianella longifolia</i> var. <i>grandis</i> s.l.	Critically Endangered on FFG Act 1998	Flora	Low likelihood of presence or impact, due to the highly modified and disturbed nature of the site, and number of introduced weed species. No individuals of this species were observed during the field assessment. One count of this species was recorded within 5km of the site in 2001, however further research confirmed this record is located further than 4km from the study area.
Spurred Helmet-orchid – <i>Corybas aconitiflorus</i>	Endangered on FFG Act 1998	Flora	Low likelihood of presence or impact, due to the highly modified and disturbed nature of the site, and number of introduced weed species. No individuals of this species were observed during the field assessment. One count of this species was recorded within 1km of the site in 1991. No additional sightings have been recorded within 5km.
Wine-lipped Spider-orchid – <i>Caladenia oenochila</i>	Critically Endangered on FFG Act 1998	Flora	Low likelihood of presence or impact, due to the highly modified and disturbed nature of the site, and number of introduced weed species. No individuals of this species were observed during the field assessment. One count of this species was recorded within 1km of the site in 1932.

Species	Status	Type	Likelihood of Impact
Marsh Saltbush – <i>Atriplex paludosa</i> supsp. <i>paludosa</i>	Endangered on FFG Act 1998	Flora	Low likelihood of presence or impact, due to the highly modified and disturbed nature of the site, and number of introduced weed species. No individuals of this species were observed during the field assessment. Two individuals of this species were recorded within 5km of the site in 2002, however further research confirmed this record is located further than 4km from the study area.
Velvet Apple-berry – <i>Billardiera scandens</i> s.s.	Endangered on FFG Act 1998	Flora	Low likelihood of presence or impact, due to the highly modified and disturbed nature of the site, and number of introduced weed species. No individuals of this species were observed during the field assessment. One count of this species was recorded within 5km of the site in 1976. Further research confirmed this record is located further than 3km from the study area.

APPENDIX G. SITE PHOTOS – NATIVE VEGETATION PATCHES - DATED 29/09/2022



Image 1. South west facing view of *Ficinia nodosa* growing within Patch 1A (deemed lost), Sustainable Tree Management, dated 29/09/2022.



Image 2. East facing view of native vegetation growing within Patch 10A nominated for retention, Sustainable Tree Management, dated 29/09/2022.



Image 3. East facing view of native vegetation growing within Patch 3A (deemed lost), Sustainable Tree Management, dated 29/09/2022.



Image 4. West facing view of Patch 2A (deemed lost) growing within the south east section of the site, adjacent to the southern boundary, nominated for removal, Sustainable Tree Management, dated 29/09/2022.



Image 5. West facing view of native vegetation growing within Patch 5A (deemed lost), Sustainable Tree Management, dated 29/09/2022.



Image 6. North facing view of native vegetation growing within Patch 5A (deemed lost), Sustainable Tree Management, dated 29/09/2022.



Image 7. North facing view of native vegetation (*Acacia paradoxa*) growing within Patch 6A (deemed lost), growing adjacent to the western boundary, Sustainable Tree Management, dated 29/09/2022.



Image 8. North facing view of native vegetation growing within Patch 6A (deemed lost), growing adjacent to the western boundary, highly disturbed. *Melaleuca ericifolia* (Swamp Paperbark) to the left of image is growing on neighbouring land adjacent to the site. Sustainable Tree Management, dated 29/09/2022.



Image 9. North facing view of native vegetation growing within Patch 7A (deemed lost), growing adjacent to the northern boundary. *Melaleuca ericifolia* (Swamp Paperbark) to the left of image is growing on neighbouring land adjacent to the site, Sustainable Tree Management, dated 29/09/2022.



Image 10. Close up view of Great Soft Rush growing within Patch 7A (deemed lost) growing adjacent to the northern boundary, Sustainable Tree Management, dated 29/09/2022.



Image 11. Northeast facing view of native vegetation growing within Patch 8A (deemed lost), Sustainable Tree Management, dated 29/09/2022.



Image 12. South facing view of *Phragmites australis* (Common Reed), and other native vegetation such as *Goodenia ovata* (Hop Goodenia) growing within Patch 9A (deemed lost) Sustainable Tree Management, dated 29/09/2022.



Image 13. Small dead Blackwood located within Patch 7A (deemed lost), within the north-western corner of the study area, Sustainable Tree Management, dated 29/09/2022.

APPENDIX H – ADDITIONAL SITE PHOTOS INCLUDING INTRODUCED WEEDS - DATED 29/09/2022



Image 14. View of *Echium plantagineum* (Patterson's Curse), a noxious weed growing within the study area Sustainable Tree Management, dated 29/09/2022.



Image 15. View of *Holcus lanatus* (Yorkshire Fog), a dominant introduced grass growing within the study area, Sustainable Tree Management, dated 29/09/2022.



Image 16. North facing view of neighbouring *Melaleuca ericifolia* (Swamp Paperbark) growing adjacent to the eastern boundary, Sustainable Tree Management, dated 29/09/2022.



Image 17. View of disturbance/alteration to topography of the site and introduced weeds, Sustainable Tree Management, dated 29/09/2022.



Image 18. View of disturbance/alteration to topography of the site and introduced and noxious weeds, Sustainable Tree Management, dated 29/09/2022.



Image 19. View of noxious weed *Cirsium vulgare* (Spear Thistle) growing within the study area, Sustainable Tree Management, dated 29/09/2022.

Sustainable Tree Management



Image 20. View of watercourse on site, adjacent to the western boundary and neighbouring *Melaleuca ericifolia* (Swamp Paperbark), Sustainable Tree Management, dated 29/09/2022.



Image 21. North east view of neighbouring vegetation growing adjacent to the eastern boundary, Sustainable Tree Management, dated 29/09/2022.

Reference: 6 Link Road, Lang Lang



Image 22. South west view of site from highest point within the study area, Sustainable Tree Management, dated 29/09/2022.



Image 23. View of stockpiles within the south of the site, Sustainable Tree Management, dated 29/09/2022.



Image 24. North western view of the highly disturbed southern section, Sustainable Tree Management, dated 29/09/2022.



Image 25. North east facing view of the southern section of the site, with topographical changes evident from previous/current land use, Sustainable Tree Management, dated 29/09/2022.



Image 26. View of noxious weed Blackberry growing on site, adjacent to the eastern boundary with neighbouring *Melaleuca ericifolia* (Swamp Paperbark) in view, Sustainable Tree Management, dated 29/09/2022.



Image 27. View of exotic grasses and weedy understory with noxious weed Blackberry growing on site, adjacent to the western boundary, Sustainable Tree Management, dated 29/09/2022.

APPENDIX I. NATIVE VEGETATION REMOVAL (NVR) REPORT

Native vegetation removal report

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 report is not an assessment by DELWP of the proposed native vegetation removal. Native vegetation information and offset requirements have been determined using spatial data provided by the applicant or their consultant.

Date of issue: 24/02/2023
Time of issue: 2:52 pm

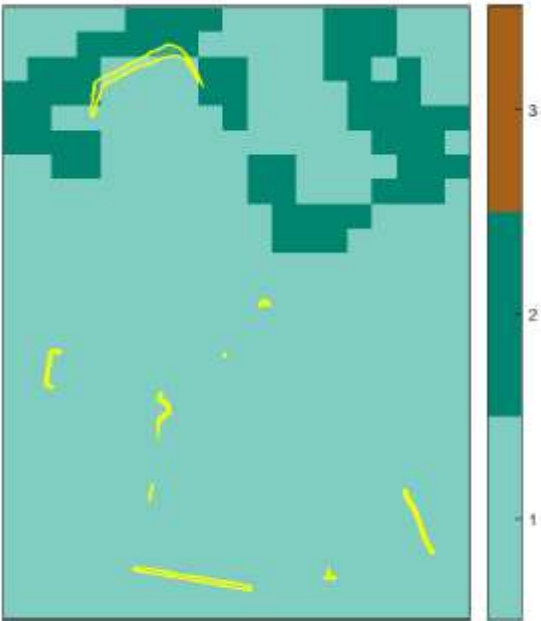
Report ID: STM_2023_002

Project ID	featureclass_143048
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Assessment pathway

Assessment pathway	Intermediate Assessment Pathway
Extent including past and proposed	0.208 ha
Extent of past removal	0.000 ha
Extent of proposed removal	0.208 ha
No. Large trees proposed to be removed	0
Location category of proposed removal	Location 2 The native vegetation is in an area mapped as an endangered Ecological Vegetation Class (as per the statewide EVC map). Removal of less than 0.5 hectares of native vegetation in this location will not have a significant impact on any habitat for a rare or threatened species.

1. Location map



Native vegetation removal report

Offset requirements if a permit is granted

Any approval granted will include a condition to obtain an offset that meets the following requirements:

General offset amount ¹	0.072 general habitat units
Vicinity	Port Phillip and Westernport Catchment Management Authority (CMA) or Cardinia Shire Council
Minimum strategic biodiversity value score ²	0.352
Large trees	0 large trees

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

Appendix 1 includes information about the native vegetation to be removed

Appendix 2 includes information about the rare or threatened species mapped at the site.

Appendix 3 includes maps showing native vegetation to be removed and extracts of relevant species habitat importance maps

¹ The general offset amount required is the sum of all general habitat units in Appendix 1.

² Minimum strategic biodiversity score is 80 per cent of the weighted average score across habitat zones where a general offset is required

Native vegetation removal report

Next steps

Any proposal to remove native vegetation must meet the application requirements of the Intermediate Assessment Pathway and it will be assessed under the Intermediate Assessment Pathway.

If you wish to remove the mapped native vegetation you are required to apply for a permit from your local council. Council will refer your application to DELWP for assessment, as required. **This report is not a referral assessment by DELWP.**

This *Native vegetation removal report* must be submitted with your application for a permit to remove, destroy or lop native vegetation.

Refer to the *Guidelines for the removal, destruction or lopping of native vegetation* (the Guidelines) for a full list of application requirements. This report provides information that meets the following application requirements:

- The assessment pathway and reason for the assessment pathway
- A description of the native vegetation to be removed (met unless you wish to include a site assessment)
- Maps showing the native vegetation and property
- The offset requirements determined in accordance with section 5 of the Guidelines that apply if approval is granted to remove native vegetation.

Additional application requirements must be met including:

- Topographical and land information
- Recent dated photographs
- Details of past native vegetation removal
- An avoid and minimise statement
- A copy of any Property Vegetation Plan that applies
- A defensible space statement as applicable
- A statement about the Native Vegetation Precinct Plan as applicable
- An offset statement that explains that an offset has been identified and how it will be secured.

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Authorised by the Victorian Government, 8 Nicholson Street, East Melbourne.

For more information contact the DELWP Customer Service Centre 136 186

www.delwp.vic.gov.au

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This publication may be of assistance to you but the State of Victoria and its employees do not guarantee that the publication is without flaw of any kind or is wholly appropriate for your particular purposes and therefore disclaims all liability for any error, loss or other consequence which may arise from you relying on any information in this publication.

Obtaining this publication does not guarantee that an application will meet the requirements of Clauses 52.16 or 52.17 of the Victoria Planning Provisions and Victorian planning schemes or that a permit to remove native vegetation will be granted.

Notwithstanding anything else contained in this publication, you must ensure that you comply with all relevant laws, legislation, awards or orders and that you obtain and comply with all permits, approvals and the like that affect, are applicable or are necessary to undertake any action to remove, lop or destroy or otherwise deal with any native vegetation or that apply to matters within the scope of Clauses 52.16 or 52.17 of the Victoria Planning Provisions and Victorian planning schemes.

Appendix 1: Description of native vegetation to be removed

All zones require a general offset, the general habitat units each zone is calculated by the following equation in accordance with the Guidelines:

General habitat units = extent x condition 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 in a GIS file						Information calculated by EnSym						
Zone	Type	BioEVC	BioEVC conservation status	Large tree(s)	Partial removal	Modelled Condition score	Polygon Extent	Extent without overlap	SBV score	HI score	Habitat units	Offset type
1-A	Patch			0	no	0.200	0.018	0.018	0.390		0.004	General
2-A	Patch			0	no	0.200	0.003	0.003	0.390		0.001	General
3-A	Patch			0	no	0.200	0.050	0.050	0.470		0.011	General
4-A	Patch			0	no	0.200	0.001	0.001	0.470		0.000	General
5-A	Patch			0	no	0.200	0.012	0.012	0.403		0.003	General
6-A	Patch			0	no	0.271	0.012	0.012	0.455		0.003	General
7-A	Patch			0	no	0.421	0.108	0.108	0.440		0.049	General
8-A	Patch			0	no	0.200	0.003	0.003	0.400		0.001	General
9-A	Patch			0	no	0.200	0.001	0.001	0.400		0.000	General

Appendix 2: Information about impacts to rare or threatened species' habitats on site

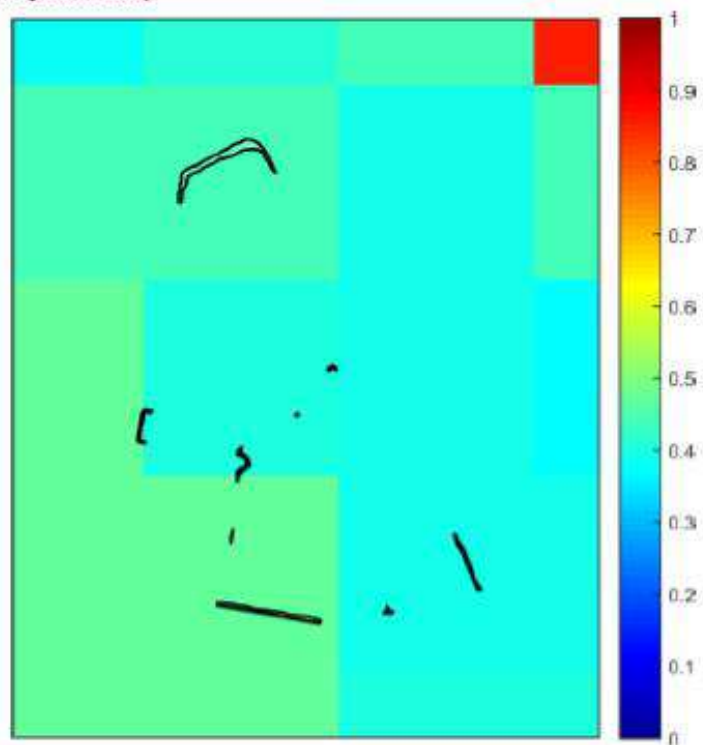
This is not applicable in the Intermediate Assessment Pathway.

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Page 5

Appendix 3 – Images of mapped native vegetation

2. Strategic biodiversity values map



3. Aerial photograph showing mapped native vegetation



4. Map of the property in context




Yellow boundaries denote areas of proposed native vegetation removal.

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APPENDIX J. REPORT OF AVAILABLE NATIVE VEGETATION CREDITS



Report of available native vegetation credits

This report lists native vegetation credits available to purchase through the Native Vegetation Credit Register.

This report is not evidence that an offset has been secured. An offset is only secured when the units have been purchased and allocated to a permit or other approval and an allocated credit extract is provided by the Native Vegetation Credit Register.

Date and time: 27/02/2023 09:50 Report ID: 17859

What was searched for?

General offset

General habitat units	Strategic biodiversity value	Large trees	Vicinity (Catchment Management Authority or Municipal district)	
0.072	0.352	0	CMA	Port Phillip and Westport
			or LGA	Cardinia Shire

Details of available native vegetation credits on 27 February 2023 09:50

These sites meet your requirements for general offsets.

Credit Site ID	GHU	LT	CMA	LGA	Land owner	Trader	Fixed price	Broker(s)
BBA-0277	6.417	454	Port Phillip and Westport	Mornington Peninsula Shire	No	Yes	No	Abezco, Ethos, VegLink
BBA-0670	0.355	0	Port Phillip and Westport	Cardinia Shire	No	Yes	No	Bio Offsets
BBA-0670	18.072	148	Port Phillip and Westport	Cardinia Shire	No	Yes	No	Abezco, VegLink
BBA-0677	16.269	1490	Port Phillip and Westport	Whittlesea City	No	Yes	No	Abezco, VegLink
BBA-0678	43.402	2620	Port Phillip and Westport	Nilumbik Shire	No	Yes	No	VegLink
BBA-0678_2	0.388	59	Port Phillip and Westport	Nilumbik Shire	No	Yes	No	VegLink
BBA-2789	1.317	14	Port Phillip and Westport	Baw Baw Shire	Yes	Yes	No	Contact NVOR
BBA-2790	2.911	116	Port Phillip and Westport	Baw Baw Shire	Yes	Yes	No	Contact NVOR
BBA-2832	0.222	0	Port Phillip and Westport	Nilumbik Shire	Yes	Yes	Yes	Nilumbik SC
BBA-2870	2.544	431	Port Phillip and Westport	Yarra Ranges Shire	Yes	Yes	No	VegLink
BBA-2871	16.335	1668	Port Phillip and Westport	Yarra Ranges Shire	Yes	Yes	No	VegLink
BBA-3030	0.162	0	Port Phillip and Westport	Moorabool Shire	Yes	Yes	No	VegLink
BBA-3030	0.204	0	Port Phillip and Westport	Moorabool Shire	Yes	Yes	Yes	VegLink

BBA-3030	0.257	0	Port Phillip and Westemport	Moorabool Shire	No	Yes	No	Contact NVOR
TFN-C0287	0.158	0	Port Phillip and Westemport	Cardinia Shire	Yes	Yes	No	TFN
TFN-C1636	0.941	130	Port Phillip and Westemport	Yarra Ranges Shire	Yes	Yes	No	Yarra Ranges SC
TFN-C1650	0.098	20	Port Phillip and Westemport	Yarra Ranges Shire	Yes	Yes	Yes	Yarra Ranges SC
TFN-C1663	0.102	27	Port Phillip and Westemport	Yarra Ranges Shire	Yes	Yes	Yes	Yarra Ranges SC
TFN-C1664	1.797	61	Port Phillip and Westemport	Yarra Ranges Shire	Yes	Yes	No	Yarra Ranges SC
TFN-C1763_3	11.231	0	Port Phillip and Westemport	Mornington Peninsula Shire	Yes	Yes	No	Ecoentric
TFN-C1962	0.098	9	Goulburn Broken, Port Phillip and Westemport	Macedon Ranges Shire	No	Yes	No	Contact NVOR
VC_CFL-0838_01	0.209	697	Port Phillip And Westemport	Yarra Ranges Shire	Yes	Yes	No	VegLink
VC_CFL-3084_01	0.210	114	Port Phillip And Westemport	Cardinia Shire	Yes	Yes	No	VegLink
VC_CFL-3682_01	1.834	0	Port Phillip And Westemport	Nilumbik Shire	Yes	Yes	No	Abezoo
VC_CFL-3687_01	0.321	64	Port Phillip And Westemport	Baw Baw Shire	Yes	Yes	No	Baw Baw SC
VC_CFL-3708_01	0.198	507	Port Phillip And Westemport	Yarra Ranges Shire	Yes	Yes	No	VegLink
VC_CFL-3709_01	0.139	395	Port Phillip And Westemport	Yarra Ranges Shire	Yes	Yes	No	VegLink
VC_CFL-3710_01	7.606	322	Port Phillip And Westemport	Yarra Ranges Shire	Yes	Yes	No	VegLink
VC_CFL-3740_01	1.094	92	Port Phillip And Westemport	Cardinia Shire, Yarra Ranges Shire	Yes	Yes	No	Bio Offsets
VC_CFL-3740_01	0.318	16	Port Phillip And Westemport	Yarra Ranges Shire	Yes	Yes	No	Bio Offsets
VC_CFL-3744_01	2.428	377	Port Phillip And Westemport	Macedon Ranges Shire	Yes	Yes	No	VegLink
VC_CFL-3758_01	0.466	12	Port Phillip And Westemport	Melton City	Yes	Yes	No	VegLink
VC_CFL-3762_01	0.271	94	Port Phillip And Westemport	Moorabool Shire	Yes	Yes	No	VegLink
VC_CFL-3764_01	8.011	51	Port Phillip And Westemport	Yarra Ranges Shire	Yes	Yes	No	VegLink
VC_CFL-3769_01	0.729	45	Port Phillip And Westemport	Nilumbik Shire	Yes	Yes	No	VegLink
VC_CFL-3769_01	0.827	0	Port Phillip And Westemport	Nilumbik Shire	Yes	Yes	Yes	VegLink

These sites meet your requirements using alternative arrangements for general offsets.

Credit Site ID	GHU	LT	CMA	LGA	Land owner	Trader	Fixed price	Broker(s)
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There are no sites listed in the Native Vegetation Credit Register that meet your offset requirements when applying the alternative arrangements as listed in section 11.2 of the Guidelines for the removal, destruction or topping of native vegetation.

These potential sites are not yet available, land owners may finalise them once a buyer is confirmed.

Credit Site ID	GHU	LT	CMA	LGA	Land owner	Trader	Fixed price	Broker(s)
VC_CFL-3746_01	4.962	563	Port Phillip And Westemport	Macedon Ranges Shire	Yes	Yes	No	VegLink
VC_CFL-3751_01	5.568	24	Port Phillip And Westemport	Moorabool Shire	Yes	Yes	No	VegLink

LT - Large Trees

CMA - Catchment Management Authority

LGA - Municipal District or Local Government Authority

Next steps

If applying for approval to remove native vegetation

Attach this report to an application to remove native vegetation as evidence that your offset requirement is currently available.

If you have approval to remove native vegetation

Below are the contact details for all brokers. Contact the broker(s) listed for the credit site(s) that meet your offset requirements. These are shown in the above tables. If more than one broker or site is listed, you should get more than one quote before deciding which offset to secure.

Broker contact details

Broker Abbreviation	Broker Name	Phone	Email	Website
Abzeo	Abzeo Pty. Ltd.	(03) 9431 5444	offsets@abzeo.com.au	www.abzeo.com.au
Baw Baw SC	Baw Baw Shire Council	(03) 5624 2411	bawbaw@bawbawshire.vic.gov.au	www.bawbawshire.vic.gov.au
Bio Offsets	Biodiversity Offsets Victoria	0452 161 013	info@offsetsvictoria.com.au	www.offsetsvictoria.com.au
Contact NVOR	Native Vegetation Offset Register	136 186	nativevegetation.offsetregister@delwp.vic.gov.au	www.environment.vic.gov.au/native-vegetation
Ecoentric	Ecoentric Environmental Consulting	0410 564 139	ecoentric@me.com	Not available
Ethos	Ethos NRM Pty Ltd	(03) 5153 0037	offsets@ethosnrm.com.au	www.ethosnrm.com.au
Nilumbik SC	Nilumbik Shire Council	(03) 9433 3316	offsets@nilumbik.vic.gov.au	www.nilumbik.vic.gov.au
TFN	Trust for Nature	8631 5888	offsets@tfn.org.au	www.trustfornature.org.au
VegLink	Vegetation Link Pty Ltd	(03) 8578 4250 or 1300 834 546	offsets@vegetationlink.com.au	www.vegetationlink.com.au
Yarra Ranges SC	Yarra Ranges Shire Council	1300 368 333	biodiversityoffsets@yarraranges.vic.gov.au	www.yarraranges.vic.gov.au

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For more information contact the DELWP Customer Service Centre 136 186 or the Native Vegetation Credit Register at nativevegetation.offsetregister@delwp.vic.gov.au

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APPENDIX K. TERMS AND CONDITIONS

1. The author contracts with you on the basis that you promise that all legal information which you provide, including land title and ownership of other property, are correct. The author is not responsible for verifying or ascertaining any of these issues.
2. The author contracts with you on the basis that your promise that all affected property complies with all applicable statutes and legislation.
3. The author has taken reasonable care to obtain necessary information from reliable sources and to verify data. However, the author neither guarantees nor is responsible for the accuracy of information provided by others.
4. If, after delivery of this report, you later require a representative to attend court to give evidence or to assist in the preparation for a hearing because of this report, you must pay an additional fee at the current rate for expert evidence.
5. Alteration of this report invalidates the entire report.
6. The author retains the copyright in this report. Possession of the original or a copy of this report does not give you or anyone else any right of reproduction, publication or use without the written permission of the author.
7. The contents of this report represent the professional opinion of the consultant. The consultancy fee for the preparation of this report is in no way contingent upon the consultant reporting a particular conclusion of fact, nor upon the occurrence of a subsequent event.
8. Sketches, diagrams, graphs and photographs in this report are intended as visual aids, are not to scale unless stated to be so, and must not be construed as engineering or architectural reports or as surveys.
9. Unless expressly stated otherwise:
 - (a) The information in this report covers only those items which were examined and reflects the condition of those items at the time of the inspection only.
 - (b) The inspection is limited to visual examination of accessible components without dissection, excavation or probing. There is no warranty or guarantee, expressed or implied, that even if they were not present during our inspection, problems or defects in plants or property examined may not arise in the future.
10. This agreement supersedes all prior discussions and representations between the author and the client on the subject and is the entire agreement and understanding between the two parties.




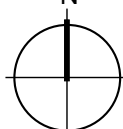






1. THIS PLAN HAS BEEN PREPARED FOR THE PURPOSE OF SUPPORTING AN APPLICATION FOR TOWN PLANNING PERMIT AND IS SUBJECT TO SURVEY AND CONSENT OF STATUTORY AUTHORITIES.

LEGEND

==== DENOTES NO DIRECT ACCESS PERMITTED TO PROPOSED BYPASS ROAD AND WESTERNPORT ROAD FROM LOTS 1, 2, 22, 23, 24, 31, 34 AND A

DE 3.00 DENOTES DRAINAGE EASEMENT

MGA 2020 ZONE 55

KEY		FILENAME: 6 Link Road Lang Lang - Native Vegetation & Habitat Zone Map V4	
	Boundary of Study Area	ADDRESS: 6 Link Road, Lang Lang	SCALE 1:1700 @ A3 N 
	EVC53 - Swamp Scrub	DATE: 16/02/2023	
	EVC821 - Tall Marsh		
	EVC934 - Brackish Grassland		
	Native Vegetation Deemed Lost - Subdivision Boundaries / Construction / Earthworks		
	Water Course / Drainage Line		
		Environmental Impact Assessment (EIA)	

Report of available native vegetation credits

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This report is **not evidence** that an offset has been secured. An offset is only secured when the units have been purchased and allocated to a permit or other approval and an allocated credit extract is provided by the Native Vegetation Credit Register.

Date and time: 27/02/2023 09:50

Report ID: 17859

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			or LGA	Cardinia Shire

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BBA-2789	1.317	14	Port Phillip and Westernport	Baw Baw Shire	Yes	Yes	No	Contact NVOR
BBA-2790	2.911	116	Port Phillip and Westernport	Baw Baw Shire	Yes	Yes	No	Contact NVOR
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BBA-3030	0.257	0	Port Phillip and Westernport	Moorabool Shire	No	Yes	No	Contact NVOR
TFN-C0287	0.158	0	Port Phillip and Westernport	Cardinia Shire	Yes	Yes	No	TFN
TFN-C1636	0.941	130	Port Phillip and Westernport	Yarra Ranges Shire	Yes	Yes	No	Yarra Ranges SC
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VC_CFL-3744_01	2.428	377	Port Phillip And Westernport	Macedon Ranges Shire	Yes	Yes	No	VegLink
VC_CFL-3758_01	0.466	12	Port Phillip And Westernport	Melton City	Yes	Yes	No	VegLink
VC_CFL-3762_01	0.271	94	Port Phillip And Westernport	Moorabool Shire	Yes	Yes	No	VegLink
VC_CFL-3764_01	8.011	51	Port Phillip And Westernport	Yarra Ranges Shire	Yes	Yes	No	VegLink
VC_CFL-3769_01	0.729	45	Port Phillip And Westernport	Nillumbik Shire	Yes	Yes	No	VegLink
VC_CFL-3769_01	0.827	0	Port Phillip And Westernport	Nillumbik Shire	Yes	Yes	Yes	VegLink

These sites meet your requirements using alternative arrangements for general offsets.

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VC_CFL-3781_01	5.568	24	Port Phillip And Westernport	Moorabool Shire	Yes	Yes	No	VegLink

LT - Large Trees

CMA - Catchment Management Authority

LGA - Municipal District or Local Government Authority

Next steps

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Attach this report to an application to remove native vegetation as evidence that your offset requirement is currently available.

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Below are the contact details for all brokers. Contact the broker(s) listed for the credit site(s) that meet your offset requirements. These are shown in the above tables. If more than one broker or site is listed, you should get more than one quote before deciding which offset to secure.

Broker contact details

Broker Abbreviation	Broker Name	Phone	Email	Website
Abezco	Abzeco Pty. Ltd.	(03) 9431 5444	offsets@abzeco.com.au	www.abzeco.com.au
Baw Baw SC	Baw Baw Shire Council	(03) 5624 2411	bawbaw@bawbawshire.vic.gov.au	www.bawbawshire.vic.gov.au
Bio Offsets	Biodiversity Offsets Victoria	0452 161 013	info@offsetsvictoria.com.au	www.offsetsvictoria.com.au
Contact NVOR	Native Vegetation Offset Register	136 186	nativevegetation.offsetregister@delwp.vic.gov.au	www.environment.vic.gov.au/native-vegetation
Ecocentric	Ecocentric Environmental Consulting	0410 564 139	ecocentric@me.com	Not available
Ethos	Ethos NRM Pty Ltd	(03) 5153 0037	offsets@ethosnrm.com.au	www.ethosnrm.com.au
Nillumbik SC	Nillumbik Shire Council	(03) 9433 3316	offsets@nillumbik.vic.gov.au	www.nillumbik.vic.gov.au
TFN	Trust for Nature	8631 5888	offsets@tfn.org.au	www.trustfornature.org.au
VegLink	Vegetation Link Pty Ltd	(03) 8578 4250 or 1300 834 546	offsets@vegetationlink.com.au	www.vegetationlink.com.au
Yarra Ranges SC	Yarra Ranges Shire Council	1300 368 333	biodiversityoffsets@yarraranges.vic.gov.au	www.yarraranges.vic.gov.au

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5 August 2023

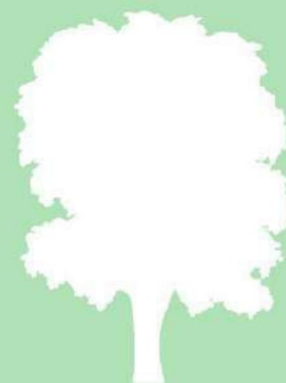


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TREE ASSESSMENT REPORT

6 Link Road
Lang Lang, Vic

Version 1



Report Prepared By



Report Commissioned By



Speedie Development Consultants

Report Reference Number

23092 LAN

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Executive Summary

- This report has been undertaken to inform future development of the site at 6 Link Road.
- The subject site is set on two disconnected parcels of land covering approximately 149,282m² in combined area.
- A total of 154 trees were assessed within and peripheral to the subject site.
- Thirty six (36) trees were assessed within the subject site.
 - Thirteen (13) trees are suitable for retention. The remaining twenty three (23) trees are inappropriate and should be considered for removal.

Retention Value	Tree #'s	# of Trees
High	n/a	0
Moderate	134, 137, 148	3
Low	132, 139 – 143, 149 – 152	10
Remove	115, 118 – 130, 136, 138, 144 – 147, 153 – 155	23

- Trees assessed within the site that are subject to clause 52.17 (native vegetation) are located within 1m of a boundary fence and are exempt from planning controls pursuant to clause 52.12 (bushfire exemptions) if the fence was constructed prior to 10 September 2009.
- Eight (8) trees were assessed on two adjoining road reserves.
 - It is unlikely that the development of the paper road will require the removal of any trees; however, it is advisable to eradicate Hawthorn trees (trees 88, 89, 114, 116 and 117) from adjoining road reserves due to their noxious weed status.
 - Tree 112 and 113 are at the entrance to the paper road from Westernport Road and should be considered for removal due to their condition and location.
 - The removal of these trees will require consent from the Cardinia Shire Council, although it is understood by the consulting arborist that they will not trigger a planning permit.
- 110 trees were assessed on adjoining properties.
 - Two (2) of the trees assessed at the Lang Lang Showgrounds (trees 25 and 41) have developed concerning structural defects and it is recommended that these trees are reported to the Cardinia Shire Council for inspection.
- Retained and off-site trees will require protection throughout the development phase. This can be achieved by calculating and establishing tree protection zones (TPZ).
 - The TPZ of all retained and off-site trees must be considered at the earliest stages of design. Construction and/or alteration of existing ground levels should be excluded from the TPZ's or limited to less than 10% of area with no incursion of the structural root zone (SRZ).
 - If a major encroachment of a tree is proposed, it must be demonstrated by a suitably experienced and qualified arborist (minimum AQF level 5) that the tree would remain viable beyond the development. If such assurances cannot be given, the design should be modified to reduce the TPZ encroachment.
 - The impact on a tree from a major encroachment can be mitigated by utilising sensitive construction techniques or carrying out root exploratory investigation to better understand the impact.
- With regard to the large lot sizes proposed (minimum 2,000m²) and width of the paper road (30m), the prescribed TPZs are not expected to pose any design challenges or make any lots unviable to develop. Furthermore, all trees within the site that are worthy of retention are located on the boundary, allowing the designer to make full use of each lot.

1. Introduction

1.1. Background

- 1.1.1. This report has been undertaken to inform future development of the site at 6 Link Road.

1.2. Report Objectives

- 1.2.1. Assess all trees within the subject site and peripheral trees on adjoining properties and the road reserve.
- 1.2.2. Provide information on species; origin; age; dimensions; condition; useful life expectancy; and arboricultural value for each assessed tree.
- 1.2.3. Interpret all relevant planning schemes and how they affect the assessed trees.
- 1.2.4. Determine the retention value for each tree.
- 1.2.5. Determine the tree protection zone (TPZ) and structural root zone (SRZ) for each assessed tree and recommend strategies to minimise the impact on retained and off-site trees from the proposed development.

1.3. Assessment Methodology

- 1.3.1. The trees were assessed by Jarrad Miller on 26/07/2023.
- 1.3.2. Numerical identification of trees was based on the *Plan of Tree Locations* prepared by Speedie Development Consultants (version 2, July 2023) to avoid confusion when cross referencing documents. It is noted that numbers **77**, **78**, and **96** were not used. Patches of vegetation (mostly Swamp Paperbark) are identified as Patches **A**, **B**, **C**, **D**, **E**, **F**, **G**, **H**, and **I**.
- 1.3.3. DBH (trunk **D**iameter at **B**reast **H**eight) was determined by measuring the circumference of the tree stem(s) at 1.4m above ground level and dividing by (π).
- 1.3.4. Tree height was measured with a rangefinder and rounded to the nearest metre. Tree height was estimated where a clear sight line could not be established. The canopy spread was measured on the ground and rounded to the nearest metre. An estimated average was used for trees with an asymmetrical canopy.
- 1.3.5. The inspection was limited to a superficial, ground-based assessment. Unless specified, the trees were not climbed, and no soil was excavated for the purposes of inspecting roots. A drone was used to capture photography of the site; however, the drone was not used to carry out a detailed aerial inspection of any tree included in this report.
- 1.3.6. The identification of tree species was limited to seasonal features available at the time of assessment.
- 1.3.7. In some cases, close access was not available to inspect trees and they were viewed either from behind a fence or at as close a distance as possible. A thorough, panoramic assessment was not conducted, and trunk diameters were estimated for these trees.
- 1.3.8. Tree protection zones (TPZ) and structural root zones (SRZ) were calculated as per Australian Standards – Protection of trees on development sites (AS 4970-2009).
- 1.3.9. Unless stated otherwise, it has been assumed that plans provided to JMA Consultancy convey trees in their true location. JMA Consultancy does not take responsibility or accept liability for inconsistencies in the actual location of any assessed tree.

2. Statutory Controls

Address of the Land	6 Link Road, Lang Lang	
Municipality	Cardinia	
Zone	Industrial 1 Zone (IN1Z)	Schedule (IN1Z)
Local Planning Overlays	Development Plan Overlay (DPO)	Schedule 14 (DPO14)
	Land Subject to Inundation Overlay (LSIO)	Schedule (LSIO)
	Road Closure Overlay (RXO)	
Bushfire Prone Area	Yes	
Permit Required to Remove Vegetation?	It is the consulting arborist's interpretation of the Cardinia planning scheme that the overlays affecting the subject site do not control the removal of vegetation. However, the removal of vegetation that is native to Victoria is subject to clause 52.17 of the Victorian planning scheme (see below).	
Native Vegetation (cl. 52.17)	<p>Pursuant to clause 52.17 of the Victorian planning scheme, a permit and associated offset credits are required to remove vegetation that is native to Victoria. Trees 132, 134, 136 – 143, 148 – 152, 154, 155 and patches F, G, H, I are the only trees assessed within the subject site that are native to Victoria; all other trees are either dead (<40cm DBH), less than 10 years old, or not native to Australia. Grasses and understorey vegetation within the site that may be subject to this clause were not investigated for the purposes of this report.</p> <p>Native vegetation which satisfies the criteria for bushfire exemptions can be removed without a native vegetation permit or offset (see below).</p>	
Bushfire Exemptions (cl. 52.12)	<p>Pursuant to clause 52.12 of the Victorian planning scheme, vegetation within 1m* of a boundary fence** is exempt from planning controls and can be removed without a permit. According to plans provided to the consulting arborist, trees 132, 134, 136 – 143, 148 – 152, 154, 155 are all within 1m of a boundary fence. Patches F, G, H, I are partially within 1 – 4m of a boundary fence.</p>	
Notes	<p>Planning advice provided is the consulting arborist's interpretation of the current planning scheme and is intended for use as a guide only.</p> <p>It is the landowner's responsibility to ensure that any vegetation removed from the site without a permit does not contravene any applicable planning controls. It is advisable to seek confirmation from the Cardinia Shire Council before removing vegetation.</p> <p>See also: https://www.cardinia.vic.gov.au/info/20018/parks_and_environment/272/removing_vegetation_from_your_property </p>	

* This distance can be extended up to 4m in locations where there is vegetation on the opposite side of the fence.

** If it was constructed prior to 10 September 2009.

3. Site Maps

3.1. Site Context



Figure 3.1. Aerial imagery (Landchecker, 2023) with the subject site highlighted in yellow

3.2. Aerial Photograph



Figure 3.2. Aerial photograph with approximate title boundaries in yellow

3.3. Site Plan with Tree Numbers



Figure 3.3. Site plan (Speedie Development Consultants, 2023)

3.3. Site Plan with Tree Numbers (continued)

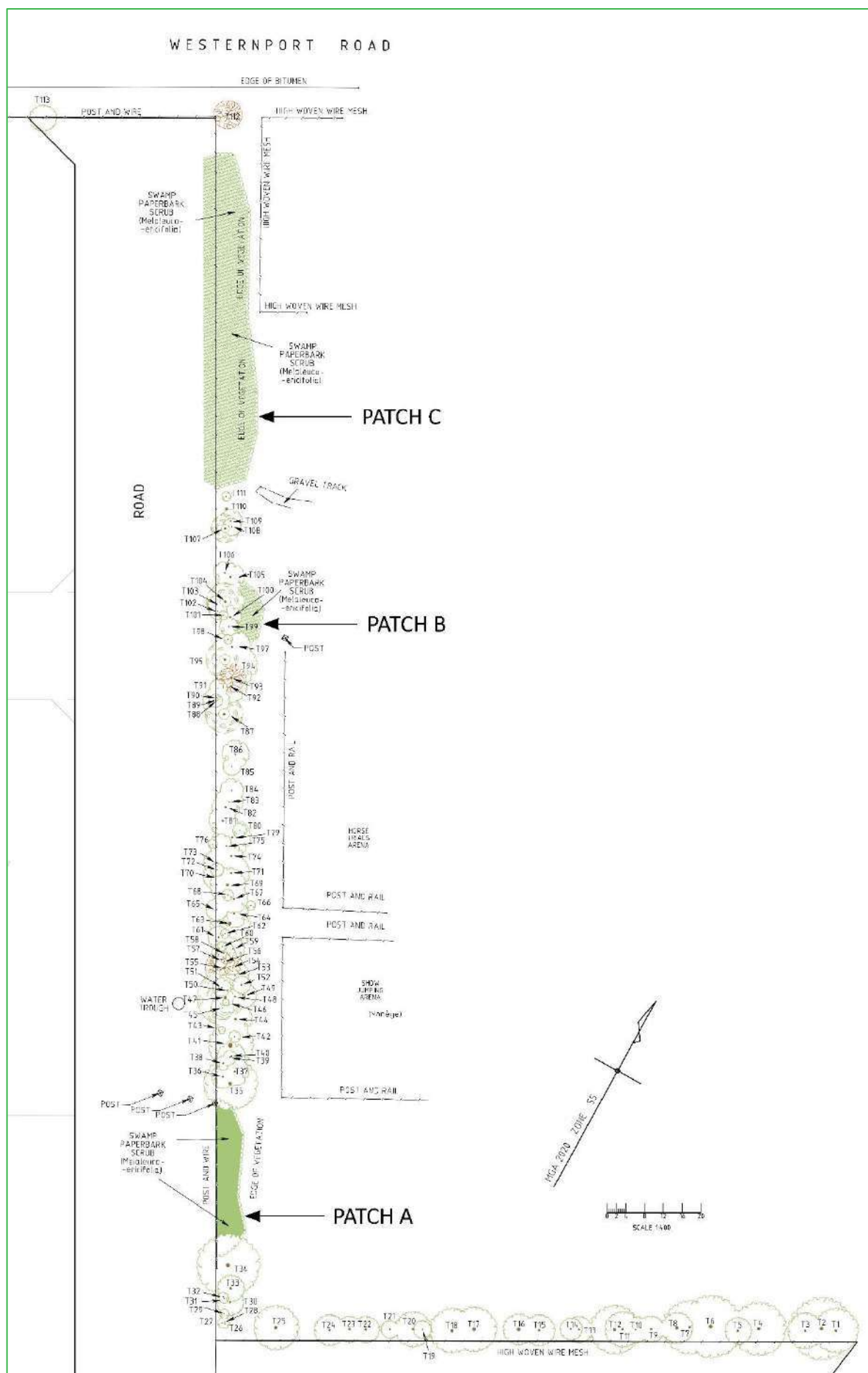


Figure 3.4. Closer view of figure 3.3. (eastern side of plan). See also Appendix F. Tree Location Plans (pages 65 – 67) for an even closer view of this plan.

3.3. Site Plan with Tree Numbers (continued)



Figure 3.5. Closer view of figure 3.3. (western side of plan). See also Appendix F. Tree Location Plans (pages 65 – 67) for an even closer view of this plan.

4. Tree Assessments

4.1. Site Overview

- 4.1.1. The subject site is set on two disconnected parcels of land covering approximately 149,282m² in combined area.
- 4.1.2. The land is relatively flat and mostly devoid of trees except for a few scattered specimens which are confined to the perimeter. The ground underfoot is very wet which has produced a thick covering of mixed grasses and reeds throughout the site.
- 4.1.3. A total of 154 trees were assessed within and peripheral to the subject site.

Location	Tree #'s	Arboricultural Value			# of Trees
		High	Mod	Low	
Subject Site (6 Link Road)	115, 118 – 130, 132, 134, 136 – 155	-	4	32	36
Lang Lang Showgrounds (120 Westernport Road)	1 – 75, 79 – 87, 90 – 95, 97 – 111	6	22	77	105
Road Reserve (east of subject site, not in service)	76, 88, 89	-	-	3	3
Road Reserve (Westernport Road)	112, 113, 114, 116, 117	-	-	5	5
30 Westernport Road	131, 133, 135, 156, 157	-	4	1	5
Total		6	30	118	154

Table 4.1. Tree population and value by location (note: tree numbers 77, 78, and 96 were not used)



Figure 4.2. Looking south over the subject site

4.2. Subject Site

- 4.2.1. Thirty six (36) trees were assessed within the subject site and are mostly confined to the perimeter.
- 4.2.2. There is little diversity throughout the tree population which predominantly comprises Wattles (*Acacia spp.*), Swamp Paperbarks (*Melaleuca ericifolia*) and Hawthorn (*Crataegus monogyna*); the latter being a very common weed species in the area.

Botanical Name	Common Name	Origin	Average Height (m)	Arboricultural Value			# of Trees
				High	Mod	Low	
<i>Acacia mearnsii</i>	Late Black Wattle	Indigenous	10.0	-	3	-	3
<i>Acacia melanoxylon</i>	Blackwood	Indigenous	5.6	-	1	7	8
<i>Crataegus monogyna</i> *	Common Hawthorn *	Exotic	3.1	-	-	17	17
<i>Melaleuca ericifolia</i>	Swamp Paperbark	Indigenous	7.3	-	-	6	6
<i>Prunus sp.</i>	Plum	Exotic	4.0	-	-	1	1
Dead tree	Dead Tree	n/a	6.0	-	-	1	1
Total				0	4	32	36

Table 4.3. Summary of trees assessed within the site

* Noxious weed species

- 4.2.3. A retention value was assigned to each tree within the site (see table 4.4.). If the land is sub-divided and subsequently developed, the design should make reasonable concessions to accommodate trees of high and moderate retention value. Trees of low value should only be retained where they do not hamper the design intent, and trees with a value of 'remove' should not be retained in any circumstance (further discussion on these trees is provided below).

Retention Value	Tree #'s	# of Trees
High	n/a	0
Moderate	134, 137, 148	3
Low	132, 139 – 143, 149 – 152	10
Remove	115, 118 – 130, 136, 138, 144 – 147, 153 – 155	23

Table 4.4. Retention value of trees within the site

- 4.2.4. The eradication of Hawthorn (trees 115, 118 – 124, 126 – 130, 144 – 147) from the site is encouraged as they are a noxious weed with a high threat rating (Cardinia Shire Council, 2019) and offer very little amenity to the landscape.
- 4.2.5. Tree 136 is a Black Wattle (*Acacia mearnsii*) situated on the edge of an eroded embankment of soil. The structural root zone on the east side of the tree is compromised and a large pocket of decay was observed on the basal stem. The current threat posed by the tree is limited to a post & wire fence; however, development of the land would likely promote the risk to an unacceptable level and, despite the moderate arboricultural rating, the removal of tree 136 should be considered at the earliest stages of design.
- 4.2.6. Tree 138 is a Swamp Paperbark (*Melaleuca ericifolia*) and presents with a low canopy density. This tree is unlikely to recover and should be considered for removal prior to development of the site.
- 4.2.7. Tree 153 is a Plum (*Prunus sp.*) which is ecologically out of place in this location and offers very little amenity to the landscape. It is not worthy of consideration in future development plans.
- 4.2.8. Trees 154 and 155 are Blackwoods (*Acacia mearnsii*) and are growing hard up against a cyclone fence. These trees are expected to damage the fence over time and as they are relatively young and readily replaceable, it is advisable to remove them in the short-term.

4.2. Subject Site (continued)



Figure 4.5. Tree 125 (Dead Tree)



Figure 4.6. Trees 134, 136, and 137 (Black Wattles)



Figure 4.7. Tree 145 (Common Hawthorn)



Figure 4.8. Tree 154 (Blackwood)

4.3. Road Reserve Trees

- 4.3.1. Eight (8) trees were assessed on two adjoining road reserves. Five (5) trees were assessed on the Westernport Road road reserve and three (3) on the *paper road* that is not currently in service (*a paper road is a road that is legally established but the physical road has not formally been constructed*).
- 4.3.2. It is unlikely that the development of the paper road will require the removal of any trees; however, it is advisable to eradicate Hawthorn trees (trees 88, 89, 114, 116 and 117) from adjoining road reserves due to their noxious weed status. The removal of these trees will require consent from the Cardinia Shire Council, although it is understood by the consulting arborist that they will not trigger a planning permit.
- 4.3.3. Tree 112 and 113 are at the entrance to the paper road from Westernport Road and should be considered for removal due to their condition and location. Both trees are exempt from clause 52.17 (112 is a dead tree with a trunk diameter less than 40cm and 113 is located within 1m of the existing fence).

Tree #	Botanical Name	Common Name	Origin	DBH (cm)	Height (m)	Location
76	<i>Melaleuca ericifolia</i>	Swamp Paperbark	Indigenous	< 10	5	Paper Road
88	<i>Crataegus monogyna</i>	Common Hawthorn	Exotic	< 10	3	Paper Road
89	<i>Crataegus monogyna</i>	Common Hawthorn	Exotic	< 10	4	Paper Road
112	<i>Dead tree</i>	Dead Tree	n/a	15, 30, 30	10	Westernport Road
113	<i>Acacia mearnsii</i>	Late Black Wattle	Indigenous	25	6	Westernport Road
114	<i>Crataegus monogyna</i>	Common Hawthorn	Exotic	< 10	3	Westernport Road
116	<i>Crataegus monogyna</i>	Common Hawthorn	Exotic	< 10	3	Westernport Road
117	<i>Crataegus monogyna</i>	Common Hawthorn	Exotic	< 10	3	Westernport Road

Table 4.9. Trees assessed on road reserves



Figure 4.10. Tree 112 (Dead Tree)



Figure 4.11. Tree 113 (Late Black Wattle)

4.4. Land Lang Showgrounds

- 4.4.1. 105 trees were assessed on the southern and western boundaries of the Lang Lang Showgrounds which abut the subject site and paper road respectively.
- 4.4.2. Protection must be afforded to these trees from the earliest stages of design through to completion of the project (see 5. Tree Protection Zones, page 22).

Location	Tree #'s	Species Composition (ordered by population)	Average Height (m)	# of Trees
Southern Boundary	1 - 25	Spotted Gums (10), Blue Gums (9), Manna Gums (6)	13.2	25
Western Boundary	26 – 75, 79 – 87, 90 – 95, 97 – 111	Paperbarks (32), Bottlebrushes (10), Hawthorns (9), Hakeas (8), Eucalyptus spp. (7), Blackwoods (6), She-Oaks (5), Dead Trees (3)	6.4	80
Total			8.0	105

Table 4.12. Summary of trees assessed at the Lang Lang Showgrounds



Figure 4.13. Trees assessed at the Lang Lang Showgrounds



Figure 4.14. Trees 1 – 25

4.4. *Lang Lang Showgrounds (continued)*



Figure 4.15. *Trees 26 – 111*



Figure 4.16. *Patch C*

4.4. *Lang Lang Showgrounds (continued)*

- 4.4.3. Two (2) of the trees assessed at the showgrounds have developed structural defects which could result in a significant failure with the potential to impact on the subject site or paper road.
- 4.4.4. Trees 25 (Manna Gum) and 41 (Willow Peppermint) present with fractured stem unions and there is a heightened likelihood of a failure occurring at these points.
- 4.4.5. It is recommended that these trees are reported to the Cardinia Shire Council for inspection.



Figure 4.17. Tree 25 (Manna Gum)



Figure 4.18. Fracture in stem union (tree 25)



Figure 4.19. Closer view of fracture (tree 25)



Figure 4.20. Fungal bracket in stem union (tree 25)

4.4. *Lang Lang Showgrounds (continued)*



Figure 4.21. *Tree 41 (Willow Peppermint)*

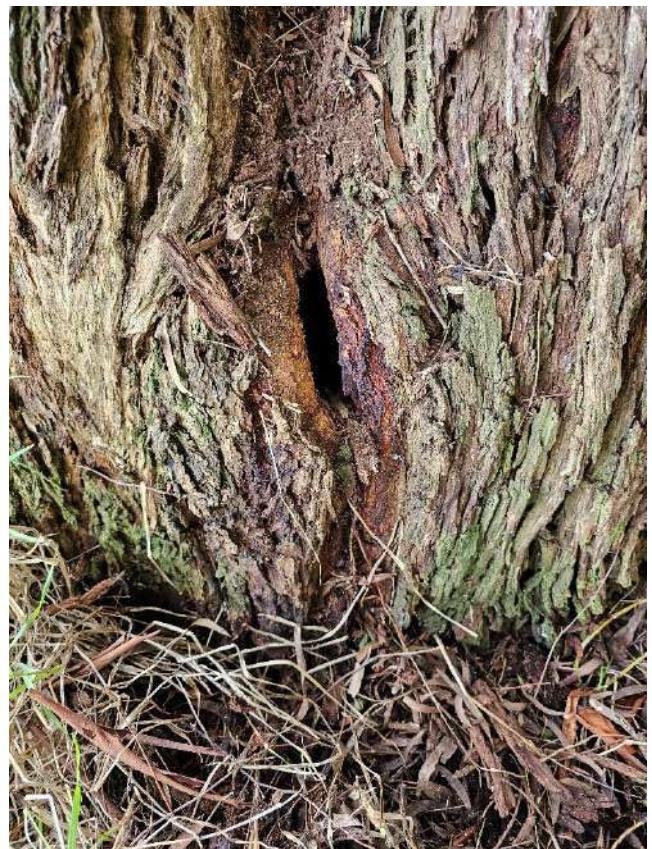


Figure 4.22. *Fracture in stem union at base of tree (tree 41)*

4.5. 30 Westernport Road

4.5.1. Five (5) trees were assessed on the adjoining property at 30 Westernport Road.

4.5.2. Protection must be afforded to these trees from the earliest stages of design through to completion of the project (see 5. Tree Protection Zones, page 22).

Tree #	Botanical Name	Common Name	Origin	DBH (cm)	Height (m)	Arb. Value
131	<i>Acacia melanoxylon</i>	Blackwood	Indigenous	42	9	Moderate
133	<i>Acacia mearnsii</i>	Late Black Wattle	Indigenous	49	11	Moderate
135	<i>Acacia mearnsii</i>	Late Black Wattle	Indigenous	27	11	Moderate
156	<i>Acacia melanoxylon</i>	Blackwood	Indigenous	30	4	Low
157	<i>Acacia melanoxylon</i>	Blackwood	Indigenous	40, 40	9	Moderate

Table 4.23. Trees assessed at 30 Westernport Road



Figure 4.24. Tree 131 (Blackwood)



Figure 4.25. Tree 157 (Blackwood)

4.6. Vegetation Patches

- 4.6.1. Nine patches of vegetation are identified on the *Plan of Tree Locations* prepared by Speedie Development Consultants (version 2, July 2023).
- 4.6.2. Due to the nature of how these trees grow, it is not practical to survey or assess individual specimens and a collective assessment was deemed appropriate, particularly as the trees within each patch share almost identical characteristics.

Patch ID	Species Composition	Origin	Comments
A	Swamp Paperbark (<i>Melaleuca ericifolia</i>)	Indigenous	-
B	Swamp Paperbark (<i>Melaleuca ericifolia</i>)	Indigenous	-
C	Swamp Paperbark (<i>Melaleuca ericifolia</i>)	Indigenous	-
D	Swamp Paperbark (<i>Melaleuca ericifolia</i>) Blackberry (<i>Rubus fruticosus</i>)	Indigenous Exotic	-
E	Blackwood (<i>Acacia melanoxylon</i>)	Indigenous	Young saplings (< 10 years old)
F	Swamp Paperbark (<i>Melaleuca ericifolia</i>)	Indigenous	-
G	Swamp Paperbark (<i>Melaleuca ericifolia</i>)	Indigenous	-
H	Swamp Paperbark (<i>Melaleuca ericifolia</i>)	Indigenous	-
I	Swamp Paperbark (<i>Melaleuca ericifolia</i>)	Indigenous	-

Table 4.26. Summary of vegetation patches



Figure 4.27. Patch H

5. Tree Protection Zones

5.1. Preamble

- 5.1.1. Trees generally grow according to a genetic blueprint; however, each individual specimen adapts their roots and canopy to specific site conditions over many years. A sudden change in a tree's environment or physical injury may lead to a decline in health, pre-mature death and/or structural failure in some cases.
- 5.1.2. To ensure the continued viability of retained and off-site trees; their trunks, branches and roots must be isolated from any potentially damaging works. This can be achieved by determining and establishing tree protection zones.

5.2. Definitions

5.2.1. Tree Protection Zone (TPZ)

A specified area above and below ground and at a given distance from the trunk set aside for the protection of a tree's roots and crown to provide for the viability and stability of a tree to be retained where it is potentially subject to damage by development (Australian Standards AS 4970 – Protection of trees on development sites).

5.2.2. Structural Root Zone (SRZ)

The area around the base of a tree required for the tree's stability in the ground. The woody root growth and soil cohesion in this area are necessary to hold the tree upright. This zone considers a tree's structural stability only, not the root zone required for a tree's vigour and long-term viability, which will usually be a much larger area (Australian Standards AS 4970 – Protection of trees on development sites).



Figure 5.1. Tree protection fencing installed around a Norway Spruce

5.3. TPZ / SRZ Dimensions

- 5.3.1. Unless specified otherwise, all TPZ and SRZ dimensions were calculated in accordance with Australian Standards AS 4970 – Protection of trees on development sites.
- 5.3.2. TPZs and SRZs are to be applied from the center of the trunk at ground level and are expressed as radius.
- 5.3.3. The TPZ and SRZ for each assessed tree is provided in Appendix A. Recorded Tree Data (pages 27 – 37) and Appendix D. TPZ/SRZ Dimensions (page 59).

5.4. Management of the TPZ

- 5.4.1. Tree protection zones should be established for all retained and off-site trees prior to any works commencing within the site.
- 5.4.2. All portions of a TPZ that occupy the subject site should be fenced off and completely isolated from construction activity and alteration of existing soil levels (unless specified otherwise in this report).
- 5.4.3. Detailed specifications are outlined in Appendix E. Generic Tree Protection Plan (pages 61 - 64).

5.5. TPZ Encroachments

- 5.5.1. An encroachment of a TPZ is any portion that will be constructed within, subject to soil level changes (cut, fill, or trenching), and/or cannot be fenced off during the construction phase.
- 5.5.2. TPZ encroachments are calculated as a percentage of area.
- 5.5.3. Australian Standards (AS 4970) defines a **minor encroachment** as up to 10% of the total area of the TPZ with no encroachment of the SRZ. If a minor encroachment is compensated for elsewhere (contiguous with the TPZ), there is no need for a detailed root investigation or modifications to the design.
- 5.5.4. Australian Standards (AS 4970) defines a **major encroachment** as greater than 10% of the total area of the TPZ or inside the SRZ. See 7.1. *General Considerations* on the following page for steps to be taken when a major encroachment of a TPZ occurs.

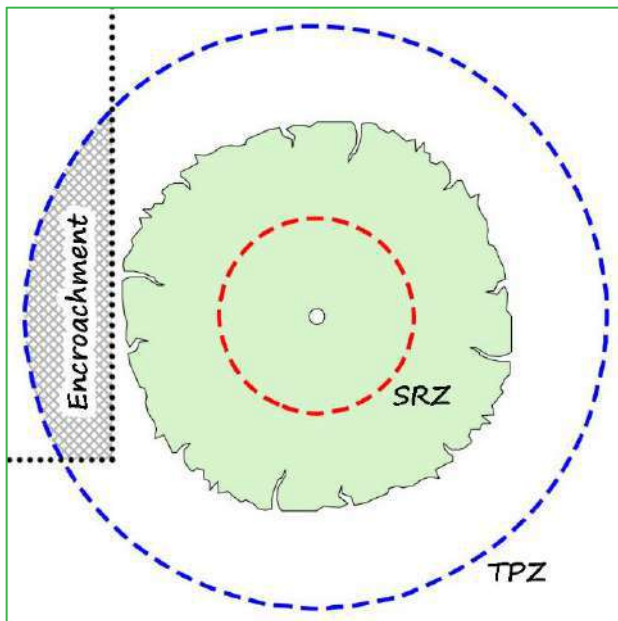


Figure 5.2. Example of a minor encroachment
(<10% of area and outside the SRZ)

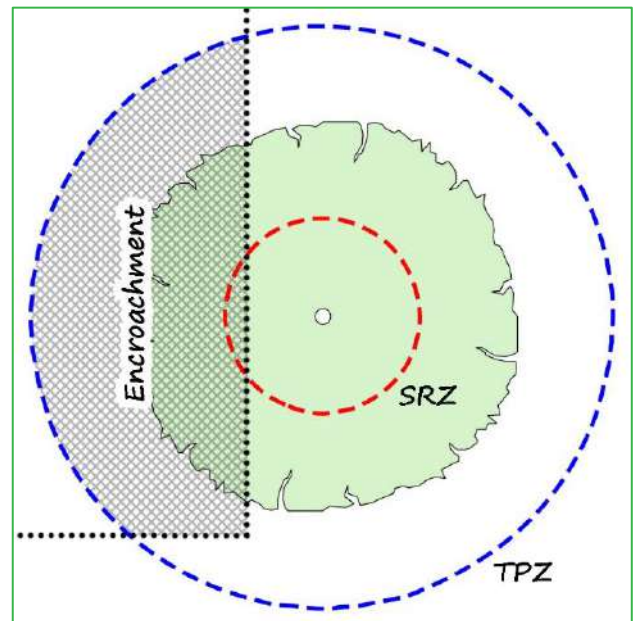


Figure 5.3. Example of a major encroachment
(>10% of area and/or inside the SRZ)

6. Design Considerations

6.1. General Considerations

- 6.1.1. The tree protection zone (TPZ) of all retained and off-site trees must be considered at the earliest stages of design. Construction and/or alteration of existing ground levels should be excluded from the TPZ's or limited to less than 10% of area with no incursion of the SRZ.
- 6.1.2. If a major encroachment (*more than 10% of the TPZ or inside the SRZ*) of a tree is proposed, it must be demonstrated by a suitably experienced and qualified arborist (minimum AQF level 5) that the tree would remain viable beyond the development. If such assurances cannot be given, the design should be modified to reduce the TPZ encroachment.
- 6.1.3. Where a major encroachment is proposed, an arborist may consider existing site conditions; tree characteristics; the tree's capacity to tolerate root loss; or the mode of impact when determining if a detailed root investigation is necessary.
- 6.1.4. The impact on a tree from a major encroachment can be mitigated by utilising sensitive construction techniques such as; pier and beam, suspended slabs, cantilevered building sections, screw piles and contiguous piling.
- 6.1.5. Trees are self-optimising structures and their roots are opportunistic. Tree roots rarely grow in a predictable, symmetrical or uniform pattern as indicated by a TPZ. If a major encroachment of a tree is proposed, root exploratory excavation may reveal little or no roots in the relevant area and therefore the actual impact would be minimal or not applicable.
- 6.1.6. Any root investigation must be undertaken using non-destructive methods and performed under the direct supervision of a suitably experienced and qualified arborist (minimum AQF level 5).

6.2. Site Specific Considerations

- 6.2.1. With regard to the large lot sizes proposed (minimum 2,000m²) and width of the paper road (30m), the prescribed TPZs are not expected to pose any design challenges or make any lots unviable to develop. Furthermore, all trees within the site that are worthy of retention are located on the boundary, allowing the designer to make full use of each lot.

7. References

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Appendix A. Recorded Tree Data

Tree #	Botanical Name	Common Name	Origin	Age	DBH (cm)	H x S (m)	Health	Structure	ULE (yrs)	Arb. Value	Ret. Value	Comments	TPZ (mm)	SRZ (mm)
1	<i>Eucalyptus bicostata</i>	Victorian Blue Gum	Native (Vic)	Semi-Mature	38	15 x 6	Good	Good	30 +	Moderate	Off-Site	Asymmetrical canopy	4560	2337
2	<i>Eucalyptus bicostata</i>	Victorian Blue Gum	Native (Vic)	Semi-Mature	70	15 x 15	Good	Good	30 +	High	Off-Site	-	8400	3021
3	<i>Eucalyptus viminalis</i>	Manna Gum	Indigenous	Semi-Mature	51	11 x 6	Good	Fair-Poor	20 - 30	Moderate	Off-Site	Central leader has failed at approx. 3m / Lateral limb now dominant	6120	2645
4	<i>Eucalyptus viminalis</i>	Manna Gum	Indigenous	Semi-Mature	84	14 x 14	Good	Fair	30 +	High	Off-Site	-	10080	3262
5	<i>Eucalyptus bicostata</i>	Victorian Blue Gum	Native (Vic)	Juvenile	21, 24 (32)	8 x 6	Fair	Fair	30 +	Low	Off-Site	Suppressed	3827	2172
6	<i>Eucalyptus bicostata</i>	Victorian Blue Gum	Native (Vic)	Semi-Mature	64	16 x 13	Good	Good	30 +	High	Off-Site	-	7680	2910
7	<i>Eucalyptus bicostata</i>	Victorian Blue Gum	Native (Vic)	Semi-Mature	51	14 x 10	Good	Good	30 +	High	Off-Site	-	6120	2645
8	<i>Corymbia maculata</i>	Spotted Gum	Native (Vic)	Semi-Mature	23, 28 (36)	14 x 7	Good	Fair	30 +	Moderate	Off-Site	-	4348	2291
9	<i>Corymbia maculata</i>	Spotted Gum	Native (Vic)	Semi-Mature	43	17 x 8	Good	Fair	30 +	Moderate	Off-Site	-	5160	2462
10	<i>Eucalyptus bicostata</i>	Victorian Blue Gum	Native (Vic)	Semi-Mature	23	6 x 4	Fair-Poor	Fair-Poor	30 +	Low	Off-Site	Suppressed / Central leader has failed	2760	1893
11	<i>Corymbia maculata</i>	Spotted Gum	Native (Vic)	Semi-Mature	39	18 x 8	Good	Good	30 +	Moderate	Off-Site	-	4680	2363
12	<i>Eucalyptus bicostata</i>	Victorian Blue Gum	Native (Vic)	Semi-Mature	67	17 x 12	Good	Fair	30 +	High	Off-Site	Stem decay near base	8040	2966
13	<i>Corymbia maculata</i>	Spotted Gum	Native (Vic)	Semi-Mature	36	12 x 7	Good	Good	30 +	Moderate	Off-Site	-	4320	2285
14	<i>Eucalyptus bicostata</i>	Victorian Blue Gum	Native (Vic)	Semi-Mature	27	8 x 3	Fair-Poor	Fair	30 +	Low	Off-Site	Reduced canopy density / Canopy mostly comprised of juvenile foliage	3240	2025
15	<i>Corymbia maculata</i>	Spotted Gum	Native (Vic)	Semi-Mature	43	16 x 8	Good	Good	30 +	Moderate	Off-Site	-	5160	2462

Table A.A. Recorded tree data (continued on next page)

Appendix A. Recorded Tree Data (continued)

Tree #	Botanical Name	Common Name	Origin	Age	DBH (cm)	H x S (m)	Health	Structure	ULE (yrs)	Arb. Value	Ret. Value	Comments	TPZ (mm)	SRZ (mm)
16	<i>Eucalyptus viminalis</i>	Manna Gum	Indigenous	Semi-Mature	31	9 x 8	Good	Fair-Poor	20 - 30	Moderate	Off-Site	Central leader has failed at approx. 3m / Lateral limb now dominant	3720	2146
17	<i>Eucalyptus viminalis</i>	Manna Gum	Indigenous	Semi-Mature	75	15 x 10	Good	Fair	30 +	High	Off-Site	Decay/cavity at base	9000	3110
18	<i>Eucalyptus viminalis</i>	Manna Gum	Indigenous	Semi-Mature	61	13 x 9	Fair	Fair	30 +	Moderate	Off-Site	Minor tip dieback	7320	2852
19	<i>Eucalyptus bicostata</i>	Victorian Blue Gum	Native (Vic)	Juvenile	16	6 x 3	Good	Fair	30 +	Low	Off-Site	Suppressed / Poorly formed stem union	2000	1625
20	<i>Corymbia maculata</i>	Spotted Gum	Native (Vic)	Semi-Mature	55	15 x 9	Good	Fair	30 +	Moderate	Off-Site	1 co-dominant stem has failed (epicormics developing) / Bracket fungi, fracture, & decay in stem union	6600	2730
21	<i>Corymbia maculata</i>	Spotted Gum	Native (Vic)	Juvenile	12, 13 (18)	8 x 4	Good	Good	30 +	Low	Off-Site	-	2123	1696
22	<i>Corymbia maculata</i>	Spotted Gum	Native (Vic)	Semi-Mature	39	16 x 8	Good	Fair	30 +	Moderate	Off-Site	-	4680	2363
23	<i>Corymbia maculata</i>	Spotted Gum	Native (Vic)	Semi-Mature	45	16 x 8	Good	Good	30 +	Moderate	Off-Site	-	5400	2510
24	<i>Corymbia maculata</i>	Spotted Gum	Native (Vic)	Semi-Mature	43	16 x 10	Good	Fair	30 +	Moderate	Off-Site	-	5160	2462
25	<i>Eucalyptus viminalis</i>	Manna Gum	Indigenous	Semi-Mature	67	15 x 8	Good	Poor	10 - 20	Low	Off-Site	-	8040	2966
26	<i>Melaleuca ericifolia</i>	Swamp Paperbark	Indigenous	Semi-Mature	< 10	4 x 2	Good	Fair	10 - 20	Low	Off-Site	-	2000	1500
27	<i>Melaleuca ericifolia</i>	Swamp Paperbark	Indigenous	Semi-Mature	< 10	4 x 2	Good	Fair	10 - 20	Low	Off-Site	-	2000	1500
28	<i>Melaleuca ericifolia</i>	Swamp Paperbark	Indigenous	Semi-Mature	< 10	4 x 1	Good	Fair	10 - 20	Low	Off-Site	-	2000	1500
29	<i>Melaleuca ericifolia</i>	Swamp Paperbark	Indigenous	Semi-Mature	< 10	3 x 2	Good	Fair	10 - 20	Low	Off-Site	-	2000	1500
30	<i>Eucalyptus globulus</i>	Southern Blue Gum	Native (Vic)	Semi-Mature	10 - 20	4 x 4	Good	Fair	30 +	Low	Off-Site	-	2400	1785

Table A.A. Recorded tree data (continued on next page)

Appendix A. Recorded Tree Data (continued)

Tree #	Botanical Name	Common Name	Origin	Age	DBH (cm)	H x S (m)	Health	Structure	ULE (yrs)	Arb. Value	Ret. Value	Comments	TPZ (mm)	SRZ (mm)
31	<i>Melaleuca ericifolia</i>	Swamp Paperbark	Indigenous	Semi-Mature	< 10	4 x 1	Good	Fair	10 - 20	Low	Off-Site	-	2000	1500
32	<i>Melaleuca ericifolia</i>	Swamp Paperbark	Indigenous	Semi-Mature	< 10	3 x 1	Good	Fair	10 - 20	Low	Off-Site	-	2000	1500
33	<i>Eucalyptus viminalis</i>	Manna Gum	Indigenous	Semi-Mature	37	6 x 5	Good	Fair-Poor	30 +	Low	Off-Site	Stem decay near base	4440	2311
34	<i>Eucalyptus viminalis</i>	Manna Gum	Indigenous	Semi-Mature	80	10 x 8	Poor	Fair-Poor	5 - 10	Low	Off-Site	Extensive dieback	9600	3195
35	<i>Eucalyptus nicholii</i>	Willow Peppermint	Native	Semi-Mature	68	12 x 12	Good	Fair	30 +	Moderate	Off-Site	-	8160	2985
36	<i>Melaleuca styphelioides</i>	Prickly Leaved Paperbark	Native	Semi-Mature	18	5 x 5	Good	Fair	30 +	Low	Off-Site	-	2160	1708
37	<i>Melaleuca styphelioides</i>	Prickly Leaved Paperbark	Native	Semi-Mature	20, 20, 20 (35)	7 x 5	Good	Fair	30 +	Low	Off-Site	-	4157	2248
38	<i>Callistemon salignus</i>	White Bottlebrush	Native	Semi-Mature	12	6 x 2	Good	Fair	20 - 30	Low	Off-Site	-	2000	1500
39	<i>Callistemon salignus</i>	White Bottlebrush	Native	Semi-Mature	< 10	5 x 2	Fair	Fair	20 - 30	Low	Off-Site	Suppressed	2000	1500
40	<i>Melaleuca styphelioides</i>	Prickly Leaved Paperbark	Native	Semi-Mature	25	7 x 5	Good	Fair	20 - 30	Low	Off-Site	-	3000	1961
41	<i>Eucalyptus nicholii</i>	Willow Peppermint	Native	Semi-Mature	45, 60 (75)	12 x 12	Good	Fair-Poor	10 - 20	Moderate	Off-Site	Fracture in stem union at base	9000	3110
42	<i>Melaleuca styphelioides</i>	Prickly Leaved Paperbark	Native	Juvenile	< 10	3 x 2	Good	Fair	30 +	Low	Off-Site	Suppressed	2000	1500
43	<i>Melaleuca styphelioides</i>	Prickly Leaved Paperbark	Native	Juvenile	< 10	4 x 3	Good	Fair	30 +	Low	Off-Site	-	2000	1500
44	<i>Melaleuca styphelioides</i>	Prickly Leaved Paperbark	Native	Semi-Mature	16, 16, 16, 16 (32)	9 x 5	Good	Fair	30 +	Low	Off-Site	-	3840	2175
45	<i>Callistemon salignus</i>	White Bottlebrush	Native	Semi-Mature	13	6 x 3	Fair	Fair	10 - 20	Low	Off-Site	Suppressed / Arched over	2000	1500

Table A.A. Recorded tree data (continued on next page)

Appendix A. Recorded Tree Data (continued)

Tree #	Botanical Name	Common Name	Origin	Age	DBH (cm)	H x S (m)	Health	Structure	ULE (yrs)	Arb. Value	Ret. Value	Comments	TPZ (mm)	SRZ (mm)
46	<i>Acacia melanoxylon</i>	Blackwood	Indigenous	Juvenile	< 10	2 x 2	Good	Good	30 +	Low	Off-Site	Suppressed	2000	1500
47	<i>Casuarina cunninghamiana</i>	River She-Oak	Native	Semi-Mature	32, 38 (50)	12 x 12	Good	Good	20 - 30	Moderate	Off-Site	-	5961	2616
48	<i>Melaleuca styphelioides</i>	Prickly Leaved Paperbark	Native	Semi-Mature	12, 13 (18)	6 x 3	Good	Fair	30 +	Low	Off-Site	Suppressed	2123	1696
49	<i>Acacia melanoxylon</i>	Blackwood	Indigenous	Semi-Mature	14	7 x 4	Good	Fair	20 - 30	Low	Off-Site	Suppressed / Arched over	2000	1537
50	<i>Melaleuca styphelioides</i>	Prickly Leaved Paperbark	Native	Semi-Mature	22	8 x 3	Good	Fair	20 - 30	Low	Off-Site	-	2640	1858
51	<i>Callistemon salignus</i>	White Bottlebrush	Native	Semi-Mature	18	6 x 2	Fair	Fair	10 - 20	Low	Off-Site	-	2160	1708
52	<i>Acacia melanoxylon</i>	Blackwood	Indigenous	Semi-Mature	19	10 x 4	Fair-Poor	Fair	5 - 10	Low	Off-Site	Chlorotic	2280	1747
53	<i>Melaleuca styphelioides</i>	Prickly Leaved Paperbark	Native	Semi-Mature	16	7 x 4	Good	Fair	20 - 30	Low	Off-Site	-	2000	1625
54	<i>Callistemon salignus</i>	White Bottlebrush	Native	Semi-Mature	< 10	5 x 3	Good	Fair	20 - 30	Low	Off-Site	-	2000	1500
55	<i>Dead tree</i>	Dead Tree	n/a	Dead	35, 35 (49)	10 x 8	Dead	Fair-Poor	10 - 20	Low	Off-Site	-	n/a	2612
56	<i>Melaleuca styphelioides</i>	Prickly Leaved Paperbark	Native	Semi-Mature	< 10	6 x 2	Good	Fair	20 - 30	Low	Off-Site	-	2000	1500
57	<i>Acacia melanoxylon</i>	Blackwood	Indigenous	Semi-Mature	< 10	8 x 3	Good	Fair	20 - 30	Low	Off-Site	-	2000	1500
58	<i>Melaleuca styphelioides</i>	Prickly Leaved Paperbark	Native	Semi-Mature	12	7 x 2	Good	Fair	20 - 30	Low	Off-Site	-	2000	1500
59	<i>Hakea salicifolia</i>	Willow Leaved Hakea	Native	Semi-Mature	< 10	4 x 3	Good	Fair	0	Low	Off-Site	-	2000	1500
60	<i>Callistemon salignus</i>	White Bottlebrush	Native	Semi-Mature	< 10	6 x 2	Good	Fair	10 - 20	Low	Off-Site	-	2000	1500

Table A.A. Recorded tree data (continued on next page)

Appendix A. Recorded Tree Data (continued)

Tree #	Botanical Name	Common Name	Origin	Age	DBH (cm)	H x S (m)	Health	Structure	ULE (yrs)	Arb. Value	Ret. Value	Comments	TPZ (mm)	SRZ (mm)
61	<i>Acacia melanoxylon</i>	Blackwood	Indigenous	Semi-Mature	< 10	8 x 3	Good	Fair	20 - 30	Low	Off-Site	-	2000	1500
62	<i>Callistemon salignus</i>	White Bottlebrush	Native	Semi-Mature	< 10	6 x 1	Good	Fair	10 - 20	Low	Off-Site	-	2000	1500
63	<i>Eucalyptus nicholii</i>	Willow Peppermint	Native	Semi-Mature	23, 32, 35, 37 (64)	11 x 9	Good	Fair	30 +	Moderate	Off-Site	-	7728	2917
64	<i>Melaleuca styphelioides</i>	Prickly Leaved Paperbark	Native	Semi-Mature	10, 13, 13 (21)	7 x 5	Good	Fair	20 - 30	Low	Off-Site	-	2511	1819
65	<i>Crataegus monogyna</i>	Common Hawthorn	Exotic	Semi-Mature	< 10	4 x 3	Good	Fair	0	Low	Off-Site	-	2000	1500
66	<i>Melaleuca ericifolia</i>	Swamp Paperbark	Indigenous	Semi-Mature	14	7 x 2	Good	Fair	10 - 20	Low	Off-Site	-	2000	1537
67	<i>Callistemon salignus</i>	White Bottlebrush	Native	Semi-Mature	14, 14, 14, 14 (28)	8 x 3	Good	Fair	10 - 20	Low	Off-Site	-	3360	2056
68	<i>Melaleuca styphelioides</i>	Prickly Leaved Paperbark	Native	Semi-Mature	< 10	7 x 3	Good	Fair	20 - 30	Low	Off-Site	-	2000	1500
69	<i>Eucalyptus sideroxylon</i>	Red Iron Bark	Native (Vic)	Semi-Mature	38	12 x 5	Good	Fair	30 +	Moderate	Off-Site	Old co-dominant stem is dead	4560	2337
70	<i>Crataegus monogyna</i>	Common Hawthorn	Exotic	Semi-Mature	< 10	5 x 3	Good	Fair	0	Low	Off-Site	-	2000	1500
71	<i>Hakea salicifolia</i>	Willow Leaved Hakea	Native	Senescent	10, 10, 13, 13, 14, 15 (31)	6 x 7	Poor	Fair-Poor	0	Low	Off-Site	Chlorotic / Dieback / Structure starting to collapse	3716	2145
72	<i>Crataegus monogyna</i>	Common Hawthorn	Exotic	Semi-Mature	< 10	4 x 2	Good	Fair	0	Low	Off-Site	-	2000	1500
73	<i>Crataegus monogyna</i>	Common Hawthorn	Exotic	Semi-Mature	< 10	5 x 4	Good	Fair	0	Low	Off-Site	-	2000	1500
74	<i>Melaleuca styphelioides</i>	Prickly Leaved Paperbark	Native	Semi-Mature	18, 26 (32)	9 x 5	Good	Fair	20 - 30	Low	Off-Site	-	3795	2164
75	<i>Hakea salicifolia</i>	Willow Leaved Hakea	Native	Semi-Mature	10 - 20	5 x 6	Fair-Poor	Fair	0	Low	Off-Site	Chlorotic / Dieback	2400	1785

Table A.A. Recorded tree data (continued on next page)

Appendix A. Recorded Tree Data (continued)

Tree #	Botanical Name	Common Name	Origin	Age	DBH (cm)	H x S (m)	Health	Structure	ULE (yrs)	Arb. Value	Ret. Value	Comments	TPZ (mm)	SRZ (mm)
76	<i>Melaleuca ericifolia</i>	Swamp Paperbark	Indigenous	Semi-Mature	< 10	5 x 2	Poor	Fair	< 5	Low	Off-Site	Low canopy density	2000	1500
79	<i>Hakea salicifolia</i>	Willow Leaved Hakea	Native	Semi-Mature	10 - 20	5 x 6	Fair-Poor	Fair	0	Low	Off-Site	Chlorotic / Dieback	2400	1785
80	<i>Melaleuca styphelioides</i>	Prickly Leaved Paperbark	Native	Semi-Mature	< 10	5 x 3	Good	Fair	30 +	Low	Off-Site	-	2000	1500
81	<i>Melaleuca styphelioides</i>	Prickly Leaved Paperbark	Native	Semi-Mature	18, 18 (25)	8 x 5	Good	Fair	20 - 30	Low	Off-Site	-	3055	1975
82	<i>Melaleuca styphelioides</i>	Prickly Leaved Paperbark	Native	Semi-Mature	21	6 x 4	Good	Fair	20 - 30	Low	Off-Site	-	2520	1822
83	<i>Hakea salicifolia</i>	Willow Leaved Hakea	Native	Semi-Mature	< 10	3 x 6	Poor	Fair-Poor	0	Low	Off-Site	Extensive dieback	2000	1500
84	<i>Melaleuca styphelioides</i>	Prickly Leaved Paperbark	Native	Semi-Mature	8, 8, 14, 14 (23)	7 x 4	Good	Fair	20 - 30	Low	Off-Site	-	2736	1886
85	<i>Crataegus monogyna</i>	Common Hawthorn	Exotic	Semi-Mature	< 10	4 x 3	Good	Fair	0	Low	Off-Site	-	2000	1500
86	<i>Melaleuca styphelioides</i>	Prickly Leaved Paperbark	Native	Semi-Mature	15, 15, 15, 15, 18, 20 (40)	8 x 5	Good	Fair	20 - 30	Low	Off-Site	-	4836	2396
87	<i>Casuarina cunninghamiana</i>	River She-Oak	Native	Semi-Mature	43	10 x 10	Good	Good	20 - 30	Moderate	Off-Site	-	5160	2462
88	<i>Crataegus monogyna</i>	Common Hawthorn	Exotic	Semi-Mature	< 10	3 x 2	Good	Fair	0	Low	Off-Site	-	2000	1500
89	<i>Crataegus monogyna</i>	Common Hawthorn	Exotic	Semi-Mature	< 10	4 x 1	Good	Fair	0	Low	Off-Site	-	2000	1500
90	<i>Crataegus monogyna</i>	Common Hawthorn	Exotic	Semi-Mature	< 10	4 x 1	Good	Fair	0	Low	Off-Site	-	2000	1500
91	<i>Crataegus monogyna</i>	Common Hawthorn	Exotic	Semi-Mature	< 10	4 x 2	Good	Fair	0	Low	Off-Site	-	2000	1500
92	<i>Hakea salicifolia</i>	Willow Leaved Hakea	Native	Senescent	10 - 20	6 x 6	Poor	Poor	0	Low	Off-Site	Extensive dieback / Structure starting to collapse	2400	1785

Table A.A. Recorded tree data (continued on next page)

Appendix A. Recorded Tree Data (continued)

Tree #	Botanical Name	Common Name	Origin	Age	DBH (cm)	H x S (m)	Health	Structure	ULE (yrs)	Arb. Value	Ret. Value	Comments	TPZ (mm)	SRZ (mm)
93	Dead tree	Dead Tree	n/a	Dead	25, 25 (35)	6 x 4	Dead	Fair-Poor	10 - 20	Low	Off-Site	-	n/a	2268
94	<i>Melaleuca styphelioides</i>	Prickly Leaved Paperbark	Native	Semi-Mature	10, 10, 35 (38)	8 x 6	Good	Fair	20 - 30	Low	Off-Site	-	4530	2331
95	<i>Casuarina cunninghamiana</i>	River She-Oak	Native	Semi-Mature	35	11 x 9	Good	Fair	20 - 30	Moderate	Off-Site	-	4200	2258
97	<i>Hakea salicifolia</i>	Willow Leaved Hakea	Native	Semi-Mature	10 - 20	4 x 6	Fair-Poor	Fair	0	Low	Off-Site	Chlorotic / Dieback	2400	1785
98	<i>Callistemon salignus</i>	White Bottlebrush	Native	Semi-Mature	11	6 x 2	Fair	Fair	10 - 20	Low	Off-Site	-	2000	1500
99	<i>Hakea salicifolia</i>	Willow Leaved Hakea	Native	Senescent	10 - 20	3 x 6	Poor	Poor	0	Low	Off-Site	Extensive dieback Collapsed	2400	1785
100	<i>Melaleuca styphelioides</i>	Prickly Leaved Paperbark	Native	Semi-Mature	10, 18 (21)	8 x 3	Good	Fair	20 - 30	Low	Off-Site	-	2471	1807
101	<i>Melaleuca ericifolia</i>	Swamp Paperbark	Indigenous	Semi-Mature	< 10	6 x 2	Good	Fair	10 - 20	Low	Off-Site	-	2000	1500
102	<i>Crataegus monogyna</i>	Common Hawthorn	Exotic	Semi-Mature	< 10	4 x 3	Good	Fair	0	Low	Off-Site	-	2000	1500
103	<i>Crataegus monogyna</i>	Common Hawthorn	Exotic	Semi-Mature	< 10	3 x 2	Good	Fair	0	Low	Off-Site	-	2000	1500
104	<i>Casuarina cunninghamiana</i>	River She-Oak	Native	Semi-Mature	30	9 x 9	Good	Fair	20 - 30	Moderate	Off-Site	-	3600	2117
105	<i>Melaleuca styphelioides</i>	Prickly Leaved Paperbark	Native	Semi-Mature	18, 18, 18 (36)	9 x 6	Good	Fair	20 - 30	Low	Off-Site	-	4320	2285
106	<i>Melaleuca styphelioides</i>	Prickly Leaved Paperbark	Native	Semi-Mature	15, 15, 15 (26)	9 x 4	Good	Fair	20 - 30	Low	Off-Site	-	3118	1992
107	<i>Casuarina cunninghamiana</i>	River She-Oak	Native	Semi-Mature	36	11 x 6	Good	Fair	20 - 30	Moderate	Off-Site	-	4320	2285
108	<i>Acacia melanoxylon</i>	Blackwood	Indigenous	Semi-Mature	12	4 x 4	Good	Fair	20 - 30	Low	Off-Site	Phototropic bend in trunk	2000	1500

Table A.A. Recorded tree data (continued on next page)

Appendix A. Recorded Tree Data (continued)

Tree #	Botanical Name	Common Name	Origin	Age	DBH (cm)	H x S (m)	Health	Structure	ULE (yrs)	Arb. Value	Ret. Value	Comments	TPZ (mm)	SRZ (mm)
109	<i>Melaleuca styphelioides</i>	Prickly Leaved Paperbark	Native	Semi-Mature	13	6 x 3	Good	Fair	20 - 30	Low	Off-Site	-	2000	1500
110	Dead tree	Dead Tree	n/a	Dead	75	6 x 5	Dead	Poor	0	Low	Off-Site	Elongated limb (dead) extending from 1.5m stump	n/a	3110
111	<i>Callistemon salignus</i>	White Bottlebrush	Native	Semi-Mature	< 10	4 x 2	Good	Fair	10 - 20	Low	Off-Site	-	2000	1500
112	Dead tree	Dead Tree	n/a	Dead	15, 30, 30 (45)	10 x 5	Dead	Fair-Poor	0	Low	Off-Site	Embrittled / Previous failures	n/a	2510
113	<i>Acacia mearnsii</i>	Late Black Wattle	Indigenous	Semi-Mature	25	6 x 6	Poor	Fair-Poor	< 5	Low	Off-Site	Low canopy density / Extensive stem decay	3000	1961
114	<i>Crataegus monogyna</i>	Common Hawthorn	Exotic	Semi-Mature	< 10	3 x 3	Good	Fair	0	Low	Off-Site	-	2000	1500
115	<i>Crataegus monogyna</i>	Common Hawthorn	Exotic	Semi-Mature	< 10	2 x 3	Good	Fair	0	Low	Remove	-	2000	1500
116	<i>Crataegus monogyna</i>	Common Hawthorn	Exotic	Semi-Mature	< 10	3 x 3	Good	Fair	0	Low	Off-Site	-	2000	1500
117	<i>Crataegus monogyna</i>	Common Hawthorn	Exotic	Semi-Mature	< 10	3 x 3	Good	Fair	0	Low	Off-Site	-	2000	1500
118	<i>Crataegus monogyna</i>	Common Hawthorn	Exotic	Semi-Mature	< 10	3 x 3	Good	Fair	0	Low	Remove	-	2000	1500
119	<i>Crataegus monogyna</i>	Common Hawthorn	Exotic	Semi-Mature	< 10	3 x 3	Good	Fair	0	Low	Remove	-	2000	1500
120	<i>Crataegus monogyna</i>	Common Hawthorn	Exotic	Semi-Mature	< 10	2 x 2	Good	Fair	0	Low	Remove	-	2000	1500
121	<i>Crataegus monogyna</i>	Common Hawthorn	Exotic	Semi-Mature	< 10	4 x 3	Good	Fair	0	Low	Remove	-	2000	1500
122	<i>Crataegus monogyna</i>	Common Hawthorn	Exotic	Semi-Mature	< 10	4 x 3	Good	Fair	0	Low	Remove	-	2000	1500
123	<i>Crataegus monogyna</i>	Common Hawthorn	Exotic	Semi-Mature	< 10	3 x 3	Good	Fair	0	Low	Remove	-	2000	1500

Table A.A. Recorded tree data (continued on next page)

Appendix A. Recorded Tree Data (continued)

Tree #	Botanical Name	Common Name	Origin	Age	DBH (cm)	H x S (m)	Health	Structure	ULE (yrs)	Arb. Value	Ret. Value	Comments	TPZ (mm)	SRZ (mm)
124	<i>Crataegus monogyna</i>	Common Hawthorn	Exotic	Semi-Mature	< 10	3 x 2	Good	Fair	0	Low	Remove	-	2000	1500
125	Dead tree	Dead Tree	n/a	Dead	20	6 x 4	Dead	Fair-Poor	0	Low	Low	-	n/a	1785
126	<i>Crataegus monogyna</i>	Common Hawthorn	Exotic	Semi-Mature	< 10	2 x 2	Good	Fair	0	Low	Remove	-	2000	1500
127	<i>Crataegus monogyna</i>	Common Hawthorn	Exotic	Semi-Mature	< 10	2 x 2	Good	Fair	0	Low	Remove	-	2000	1500
128	<i>Crataegus monogyna</i>	Common Hawthorn	Exotic	Semi-Mature	< 10	3 x 2	Good	Fair	0	Low	Remove	-	2000	1500
129	<i>Crataegus monogyna</i>	Common Hawthorn	Exotic	Semi-Mature	< 10	3 x 3	Good	Fair	0	Low	Remove	-	2000	1500
130	<i>Crataegus monogyna</i>	Common Hawthorn	Exotic	Semi-Mature	< 10	3 x 3	Good	Fair	0	Low	Remove	-	2000	1500
131	<i>Acacia melanoxylon</i>	Blackwood	Indigenous	Semi-Mature	42	9 x 7	Good	Fair-Poor	20 - 30	Moderate	Off-Site	Poorly formed stem union	5040	2438
132	<i>Acacia melanoxylon</i>	Blackwood	Indigenous	Semi-Mature	23	9 x 3	Good	Fair	20 - 30	Low	Low	-	2760	1893
133	<i>Acacia mearnsii</i>	Late Black Wattle	Indigenous	Semi-Mature	49	11 x 8	Good	Fair	20 - 30	Moderate	Off-Site	-	5880	2601
134	<i>Acacia mearnsii</i>	Late Black Wattle	Indigenous	Semi-Mature	25	11 x 4	Good	Fair	20 - 30	Moderate	Moderate	-	3000	1961
135	<i>Acacia mearnsii</i>	Late Black Wattle	Indigenous	Semi-Mature	27	11 x 6	Good	Fair	20 - 30	Moderate	Off-Site	-	3240	2025
136	<i>Acacia mearnsii</i>	Late Black Wattle	Indigenous	Semi-Mature	33, 37 (50)	11 x 13	Good	Fair-Poor	10 - 20	Moderate	Remove	Soil erosion at base (roots exposed) / Stem decay	5949	2614
137	<i>Acacia mearnsii</i>	Late Black Wattle	Indigenous	Semi-Mature	34	8 x 11	Good	Fair-Poor	20 - 30	Moderate	Moderate	Growing on a 45° angle / Central leader has failed	4080	2231
138	<i>Melaleuca ericifolia</i>	Swamp Paperbark	Indigenous	Semi-Mature	10 - 20	8 x 2	Poor	Fair	< 5	Low	Remove	Low canopy density	2400	1785

Table A.A. Recorded tree data (continued on next page)

Appendix A. Recorded Tree Data (continued)

Tree #	Botanical Name	Common Name	Origin	Age	DBH (cm)	H x S (m)	Health	Structure	ULE (yrs)	Arb. Value	Ret. Value	Comments	TPZ (mm)	SRZ (mm)
139	<i>Melaleuca ericifolia</i>	Swamp Paperbark	Indigenous	Semi-Mature	10 - 20	8 x 2	Good	Fair	10 - 20	Low	Low	-	2400	1785
140	<i>Melaleuca ericifolia</i>	Swamp Paperbark	Indigenous	Semi-Mature	10 - 20	7 x 2	Good	Fair	10 - 20	Low	Low	-	2400	1785
141	<i>Melaleuca ericifolia</i>	Swamp Paperbark	Indigenous	Semi-Mature	< 10	7 x 2	Good	Fair	10 - 20	Low	Low	-	2000	1500
142	<i>Melaleuca ericifolia</i>	Swamp Paperbark	Indigenous	Semi-Mature	< 10	7 x 2	Good	Fair	10 - 20	Low	Low	-	2000	1500
143	<i>Melaleuca ericifolia</i>	Swamp Paperbark	Indigenous	Semi-Mature	10 - 20	7 x 3	Good	Fair	10 - 20	Low	Low	-	2400	1785
144	<i>Crataegus monogyna</i>	Common Hawthorn	Exotic	Semi-Mature	< 10	5 x 3	Good	Fair	0	Low	Remove	-	2000	1500
145	<i>Crataegus monogyna</i>	Common Hawthorn	Exotic	Semi-Mature	< 10	4 x 3	Good	Fair	0	Low	Remove	-	2000	1500
146	<i>Crataegus monogyna</i>	Common Hawthorn	Exotic	Semi-Mature	< 10	3 x 2	Good	Fair	0	Low	Remove	-	2000	1500
147	<i>Crataegus monogyna</i>	Common Hawthorn	Exotic	Semi-Mature	< 10	3 x 3	Good	Fair	0	Low	Remove	-	2000	1500
148	<i>Acacia melanoxylon</i>	Blackwood	Indigenous	Semi-Mature	40	7 x 8	Good	Fair	20 - 30	Moderate	Moderate	-	4800	2388
149	<i>Acacia melanoxylon</i>	Blackwood	Indigenous	Juvenile	< 10	6 x 2	Good	Fair	30 +	Low	Low	-	2000	1500
150	<i>Acacia melanoxylon</i>	Blackwood	Indigenous	Juvenile	< 10	6 x 2	Good	Fair	30 +	Low	Low	-	2000	1500
151	<i>Acacia melanoxylon</i>	Blackwood	Indigenous	Juvenile	< 10	5 x 2	Good	Fair	30 +	Low	Low	-	2000	1500
152	<i>Acacia melanoxylon</i>	Blackwood	Indigenous	Juvenile	< 10	5 x 2	Good	Fair	30 +	Low	Low	-	2000	1500
153	<i>Prunus sp.</i>	Plum	Exotic	Semi-Mature	< 10	4 x 4	Good	Fair	20 - 30	Low	Low	-	2000	1500

Table A.A. Recorded tree data (continued on next page)

Appendix A. Recorded Tree Data (continued)

Tree #	Botanical Name	Common Name	Origin	Age	DBH (cm)	H x S (m)	Health	Structure	ULE (yrs)	Arb. Value	Ret. Value	Comments	TPZ (mm)	SRZ (mm)
154	<i>Acacia melanoxylon</i>	Blackwood	Indigenous	Juvenile	< 10	3 x 2	Good	Fair	10 - 20	Low	Remove	Future impact on fence expected	2000	1500
155	<i>Acacia melanoxylon</i>	Blackwood	Indigenous	Juvenile	< 10	4 x 3	Good	Fair	10 - 20	Low	Remove	Future impact on fence expected	2000	1500
156	<i>Acacia melanoxylon</i>	Blackwood	Indigenous	Semi-Mature	30	4 x 4	Good	Fair	10 - 20	Low	Off-Site	Future impact on fence expected	3600	2117
157	<i>Acacia melanoxylon</i>	Blackwood	Indigenous	Semi-Mature	40, 40 (57)	9 x 9	Good	Fair	20 - 30	Moderate	Off-Site	Fence runs between two co-dominant stems	6788	2763

Table A.A. Recorded tree data (continued from previous pages)

DBH = Trunk diameter @ breast height (1.4m)

H x S = Height x Spread

ULE = Useful Life Expectancy

Arb. Value = Arboricultural Value

Ret. Value = Retention Value

TPZ = Tree protection zone (radius)

SRZ = Structural Root zone (radius)

<10 = DBH not recorded (no stems greater than 10cm diameter @ 1.4m)

10 – 20 = DBH was not practical to record (stem diameters range from 10 – 20cm @ 1.4m)

The combined DBH (as per AS 4970) for trees with multiple stems is provided in brackets

Appendix B. Photographic Catalogue



Figure B.A. Tree 1 (*Victorian Blue Gum*)



Figure B.B. Tree 2 (*Victorian Blue Gum*)



Figure B.C. Tree 3 (*Manna Gum*)



Figure B.D. Tree 4 (*Manna Gum*)



Figure B.E. Tree 5 (*Victorian Blue Gum*)



Figure B.F. Tree 6 (*Victorian Blue Gum*)



Figure B.G. Tree 7 (*Victorian Blue Gum*)



Figure B.H. Tree 8 (*Spotted Gum*)



Figure B.I. Tree 9 (*Spotted Gum*)