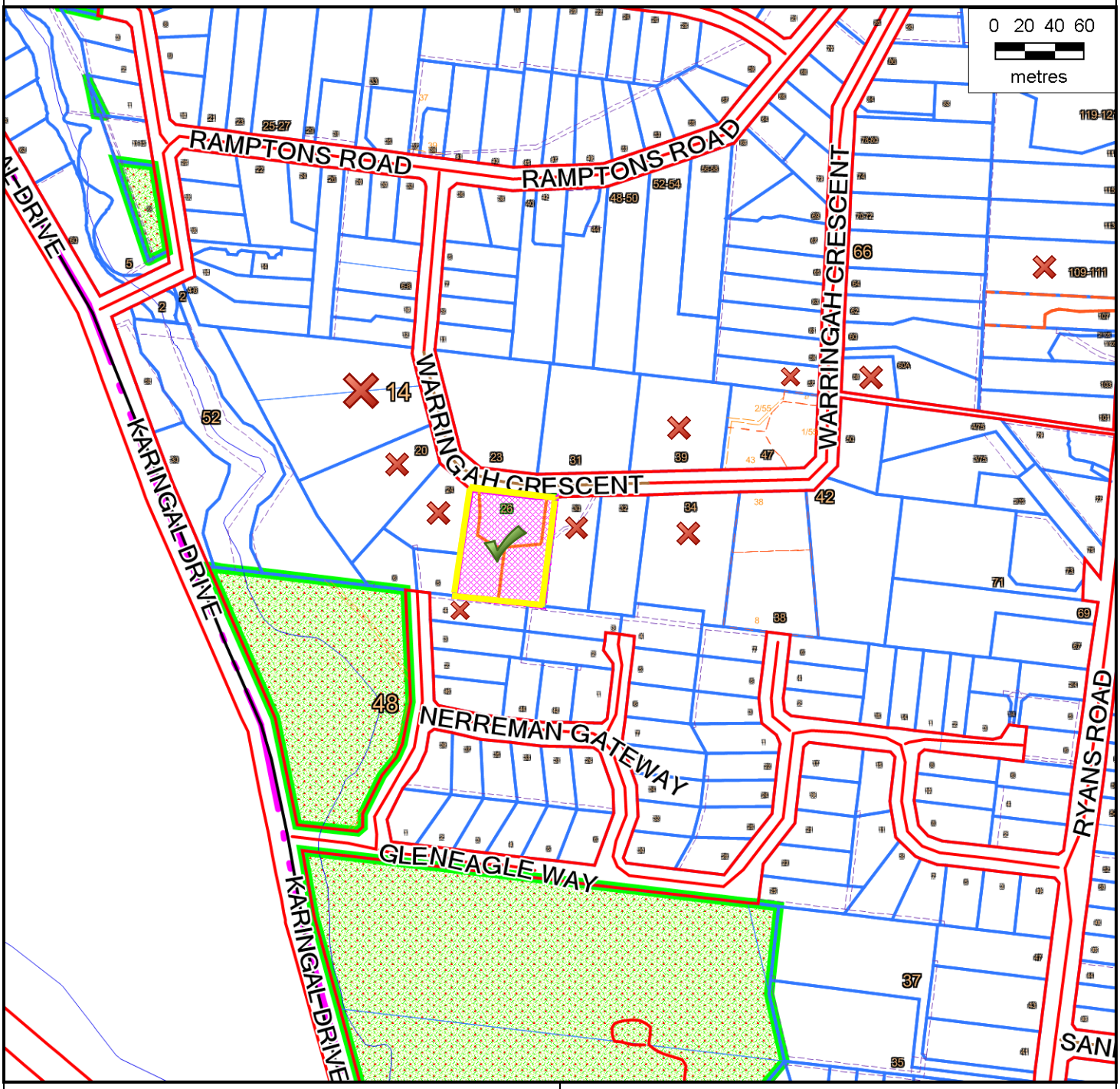
Nillumbik Shire Council

Map Width: 104.6 m

Date: Wednesday, 2 September 2020

Subject Site and Surrounds

Subject Site: 26 Warringah Crescent, Eltham	File Reference: W016/00/026P
Application Number:153/2020/14P	Melway's Reference: 21F3



Subject Site

Objectors

Nearby Objectors: 10

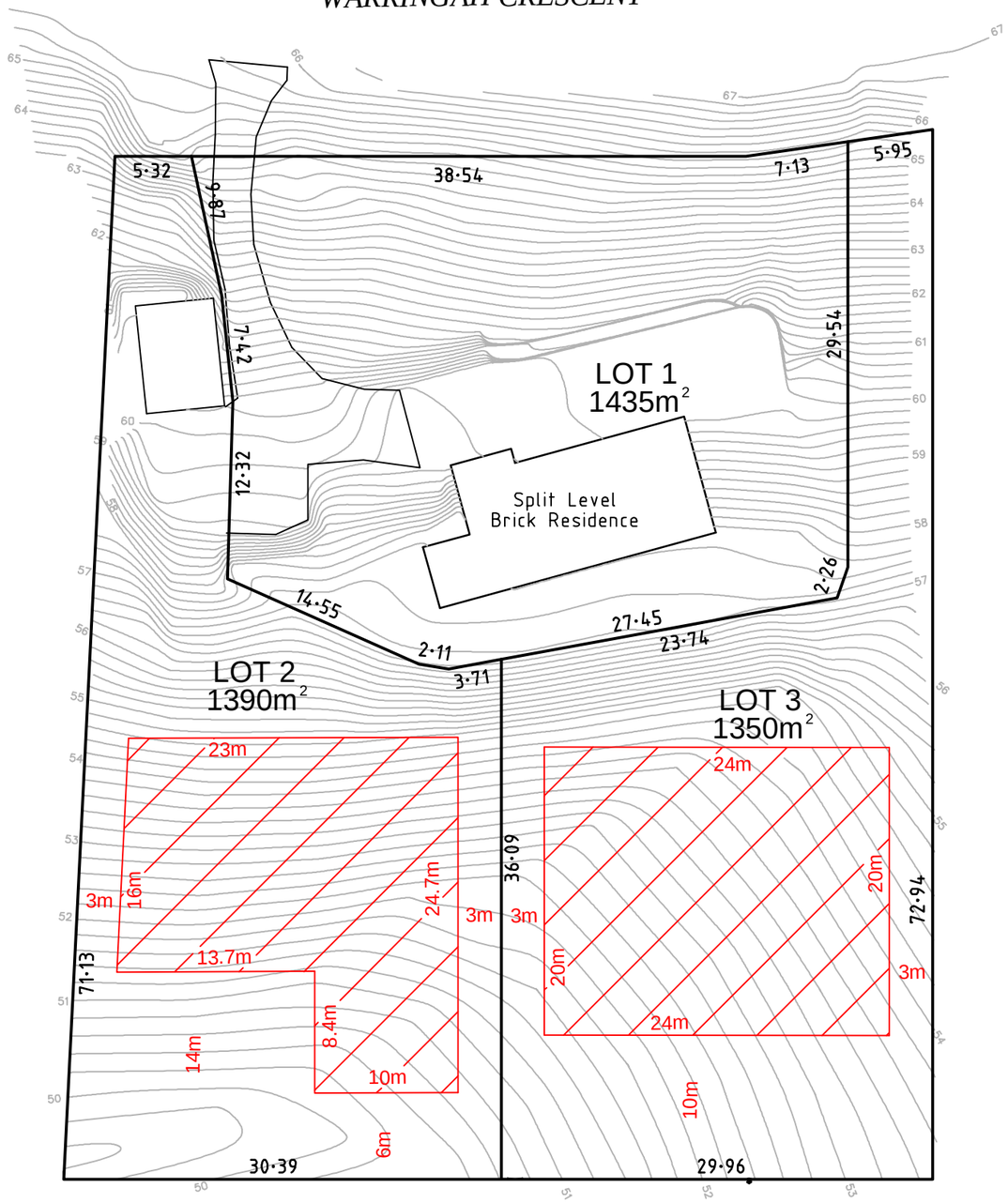
Total: 10

© Nillumbik Shire Council 2018	
Map Width:	740.6 m
Produced By:	Planning and Building Services
Responsible Officer:	Tyson McAdie
Date:	Wednesday, 2 September 2020

N

APPROX. NORTH

WARRINGAH CRESCENT



Nillumbik
The Green Wedge Shire

ADVERTISED PLAN

Plan: 1 **of** 8

Application No:

NOTATIONS

Denotes Building Envelope

Building Envelope Sizes

Lot 2: 462sq.m
Percentage of Lot Area: 33%

Lot 3: 479sq.m
Percentage of Lot Area: 35%

Levels shown on this plan are to Australian Height Datum vide NILLUMBIK PM 615 (R.L. 50.90m)

Contour interval 0.2 metres

REVISIONS

Version	Description	Date

JOB TITLE
26 WARRINGAH CRESCENT
ELTHAM 3095

DRAWING NAME
PLAN OF BUILDING ENVELOPES

DRAWING REFERENCE
1688501F

VERSION
01

LAND DESCRIPTION
LOT 6 ON LP58605

DATE DRAWN
04/03/2020

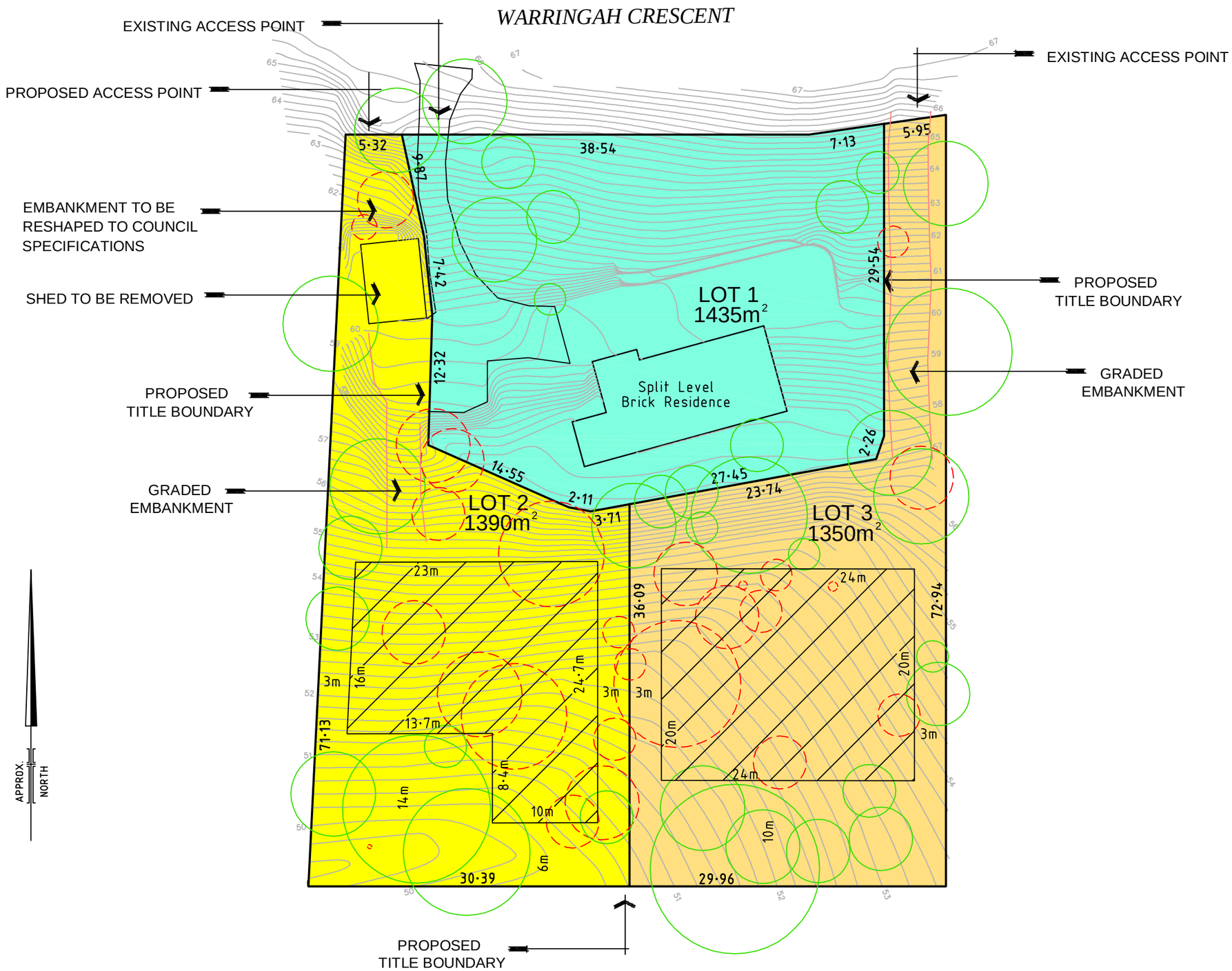
ORIGINAL SHEET SIZE
A3

SHEET No
1 of 1

SCALE
1:250
1.25 0 1.25 2.5 3.75 5
LENGTHS ARE IN METRES

DRAWN BY
BW

WEBSTER SURVEY GROUP
ABN: 35 456 993 855
662 Main Road, Eltham 3095
P.O Box 291, Eltham 3095
Telephone: (03) 9439 4222
Facsimile: (03) 9439 5288
webstergroup.com.au



NOTATIONS

- Denotes tree to be retained
- Denotes tree to be removed
- Denotes Building Envelope

Levels shown on this plan are to Australian Height Datum vide NILLUMBIK PM 615 (R.L. 50.90m)

Contour interval 0.2 metres

Nillumbik
The Green Wedge Shire

ADVERTISED PLAN

Plan: 2 **of** 8

Application No:

REVISIONS

Version	Description	Date

JOB TITLE
26 WARRINGAH CRESCENT
ELTHAM 3095

DRAWING NAME
DESIGN RESPONSE

DRAWING REFERENCE
1688501H

VERSION
01

LAND DESCRIPTION
LOT 6 ON LP58605

DATE DRAWN
04/03/2020

ORIGINAL SHEET SIZE
A3

SHEET No
1 of 1

SCALE
1:250
1.25 0 1.25 2.5 3.75 5
LENGTHS ARE IN METRES

DRAWN BY
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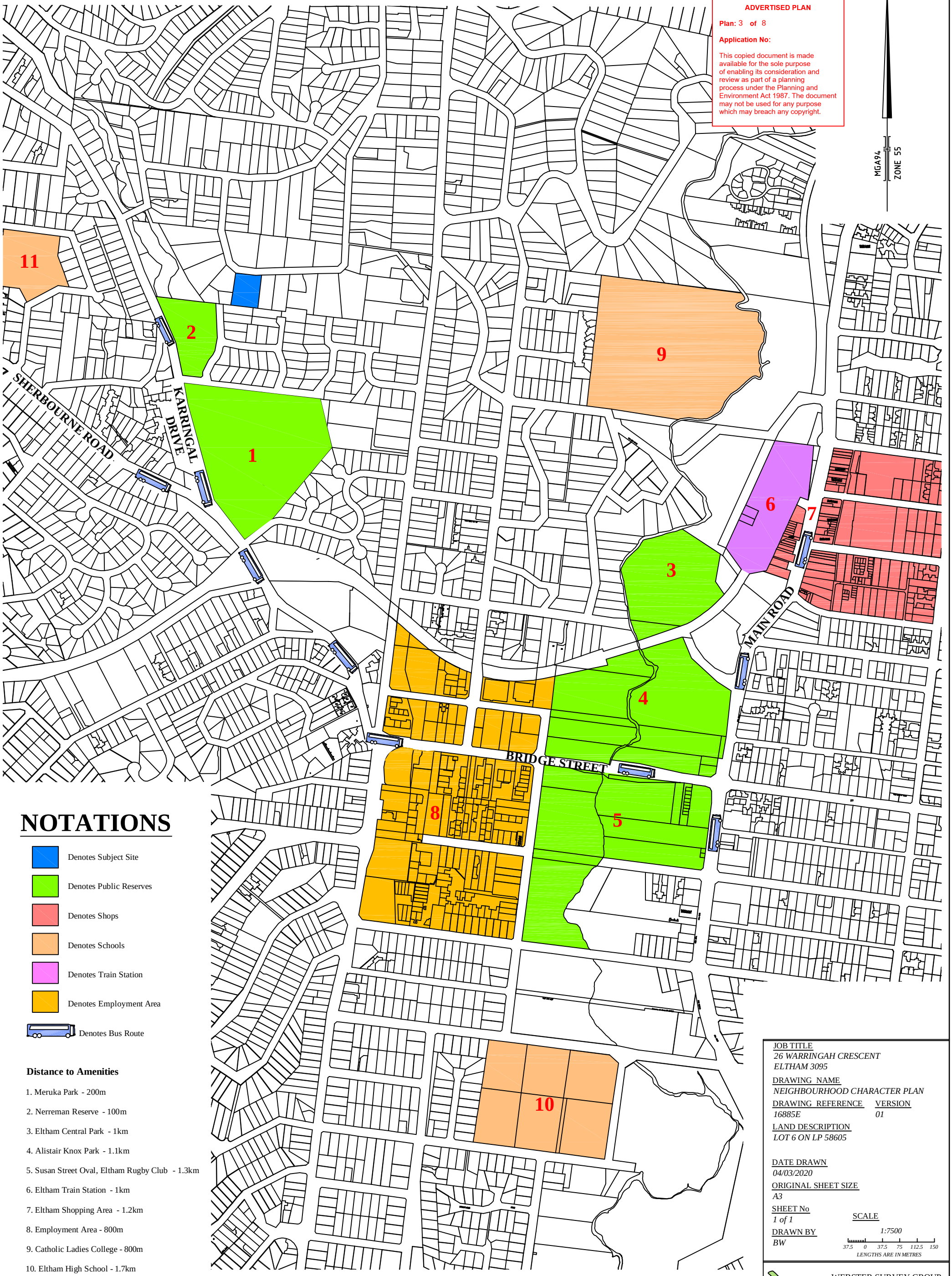
MGA94 ZONE 55



NOTATIONS

- Denotes Subject Site
- Denotes Public Reserves
- Denotes Shops
- Denotes Schools
- Denotes Train Station
- Denotes Employment Area
- Denotes Bus Route

Distance to Amenities

1. Meruka Park - 200m
2. Nerreman Reserve - 100m
3. Eltham Central Park - 1km
4. Alistair Knox Park - 1.1km
5. Susan Street Oval, Eltham Rugby Club - 1.3km
6. Eltham Train Station - 1km
7. Eltham Shopping Area - 1.2km
8. Employment Area - 800m
9. Catholic Ladies College - 800m
10. Eltham High School - 1.7km
11. Sherbourne Primary School - 500m

JOB TITLE
26 WARRINGAH CRESCENT
ELTHAM 3095

DRAWING NAME
NEIGHBOURHOOD CHARACTER PLAN

DRAWING REFERENCE *16885E*

VERSION *01*

LAND DESCRIPTION
LOT 6 ON LP 58605

DATE DRAWN
04/03/2020

ORIGINAL SHEET SIZE
A3

SHEET No
1 of 1

DRAWN BY
BW

SCALE
1:7500
37.5 0 37.5 75 112.5 150
LENGTHS ARE IN METRES

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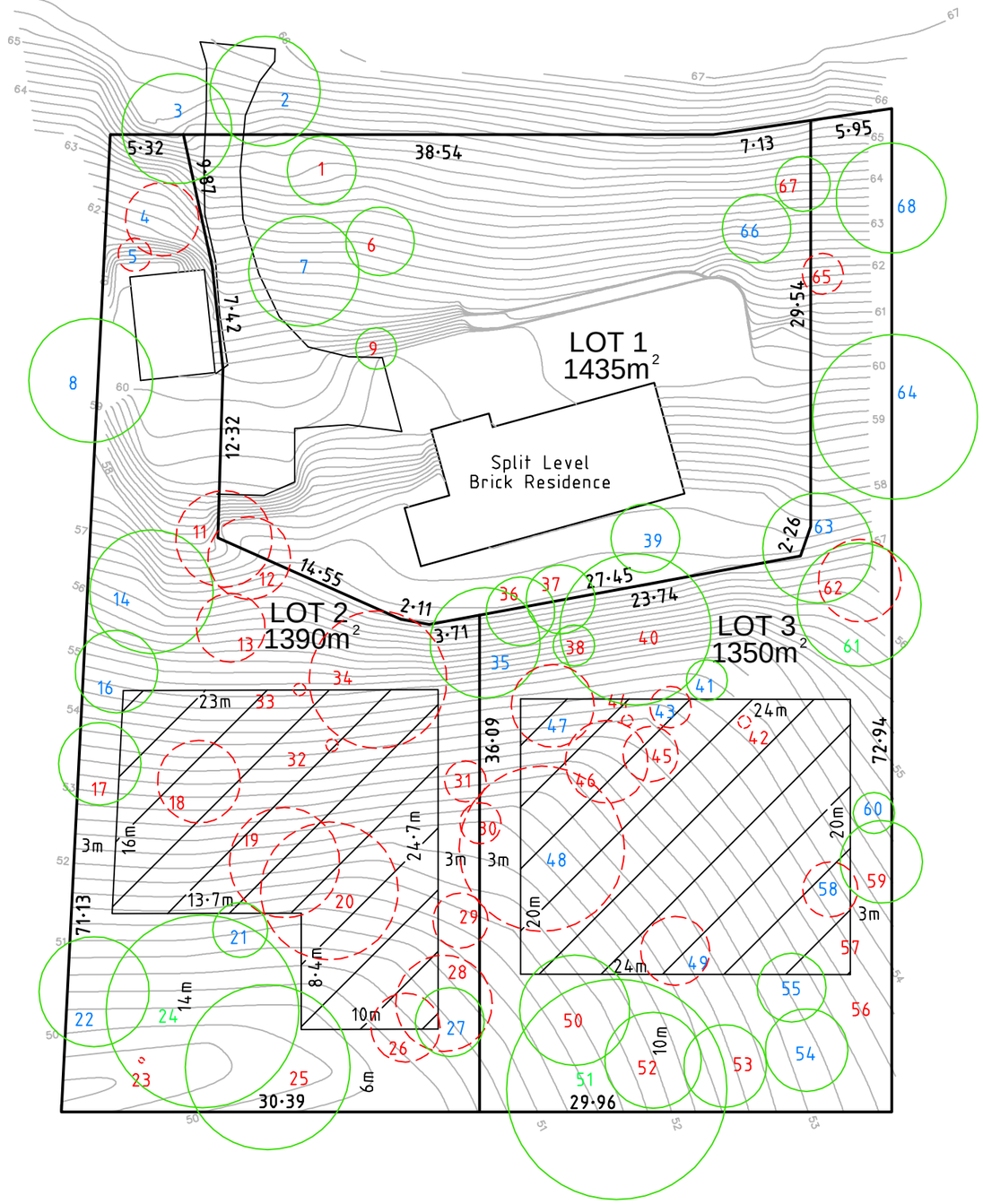
APPROX. NORTH

WARRINGAH CRESCENT



Nillumbik
The Green Wedge Shire

ADVERTISED PLAN

Plan: 4 **of** 8

Application No:

NOTATIONS

- Denotes tree to be retained
- Denotes tree to be removed
- Denotes Building Envelope

Tree Identification shown thus 2 indicates Low Retention Value
Tree Identification shown thus 2 indicates Medium Retention Valu
Tree Identification shown thus 2 indicates High Retention Value

Levels shown on this plan are to Australian Height Datum vide NILLUMBIK PM 615 (R.L. 50.90m)

Contour interval 0.2 metres

REVISIONS

Version	Description	Date

JOB TITLE
26 WARRINGAH CRESCENT
ELTHAM 3095

DRAWING NAME
PLAN OF TREE LOCATIONS

DRAWING REFERENCE
1688501G

VERSION
01

LAND DESCRIPTION
LOT 6 ON LP58605

DATE DRAWN
04/03/2020

ORIGINAL SHEET SIZE
A3

SHEET No
1 of 1

SCALE
1:250
1.25 0 1.25 2.5 3.75 5
LENGTHS ARE IN METRES

DRAWN BY
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PLANNING REPORT

26 Warringah Crescent, Eltham

This document consists of 66 pages

Ref: 16885

April 2020

TABLE OF CONTENTS

1. Executive Summary

This planning report has been prepared by Webster Survey Group on behalf of Mark Lendon, the registered proprietor of 26 Warringah Crescent, Eltham.

The application seeks permission to subdivide the land at 26 Warringah Crescent into three (3) lots and to remove native vegetation.

The parcel is located within the Neighbourhood Residential Zone (Schedule 1) and is affected by a Significant Landscape Overlay (Schedule 2), Environmental Significance Overlay (Schedule 1). It is also within a Neighbourhood Character Precinct (Semi Bush 3).

In this instance planning permission is required to subdivide the land into three (3) lots. Permission is also required under the Significant Landscape Overlay (Schedule 2) and Environmental Significance Overlay (Schedule 1) to remove native vegetation.

While the proposed subdivision does not deliver final built form it will support the future development of two additional dwellings that can be accommodated within approved building envelopes.

The proposed subdivision will retain the majority of existing vegetation within the site and only a minimal amount of vegetation is proposed to be removed which is generally of low retention value. There is an opportunity for new planting to replace those trees which are removed.

It is recommended that a permit is issued for a three (3) lot subdivision subject to the relevant conditions.

2. Site Description

The subject site is located on the southern side of Warringah Crescent, Eltham. It is situated approximately 200 metres from the intersection of Warringah Crescent and Ramptons Road.

The site is more particularly described as Certificate of Title Volume 8540 Folio 911 and dimensions are shown on lot 6 on LP 58605.

The land is not encumbered by any easements.

The area of the parcel is approximately 4175m².

The land is generally rectangular in shape with the following dimensions:

Northern boundary	56.94 metres
Eastern boundary	72.94 metres
Southern boundary	60.35 metres
Western boundary	71.16 metres

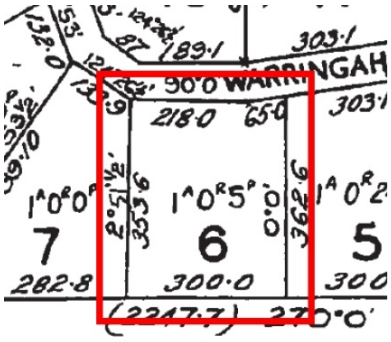
The land features a moderate slope with a gradual fall of around 15 metres generally tending from north to south. The slope levels out in the southern half of the site and is gently undulating.

The site is developed with a split level brick residence that is situated in the northern half of the site. The dwelling is setback around 18 metres from Warringah Crescent, approximately 15 metres from the eastern boundary and approximately 22 metres from the Western boundary.

The site has two vehicle access points from Warringah Crescent. One access point is located near the western boundary and the other access point is located near the eastern boundary.

There is a sealed driveway between the western access point and the existing residence. A graded embankment is situated between the end of the driveway and the rear of the property.

Along the eastern side of the property there is a graded embankment between the eastern access point and the rear of the property.



*Subject site as shown on title diagram

A copy of Title and title sketch are attached at Appendix A.

A Feature and Level Survey indicating the existing site conditions and Plan of Adjoining Property Setbacks is attached at Appendix B.

Aerial photograph of the subject site

Sewerage

A sewer main extends along the entire length of the adjacent southern boundary. A sewer branch is situated near the south-west corner of the site.

This length of sewer main will enable new sewer branches to be constructed in locations that will minimise the impact on vegetation and all works will be constructed to the satisfaction of the responsible authority.

**Yarra Valley Water Asset Map – Sewerage*

3. Neighbourhood Description

The subject site is located within a residential neighbourhood in a semi-bush setting.

Surrounding lots generally comprise single storey, split level and two storey detached dwellings.

Lot sizes vary in shape and sizes range from 750 square metres to 4000 square metres.

Town Planning Permits have been granted on several parcels within close proximity to the subject site for three lot subdivisions while other similar applications are currently pending approval from Council.

Neighbouring Interfaces

Surrounding properties adjacent to the subject site and on opposite sides of the adjacent roadways contain a mixture of single storey, split level and two storey residences.

4. Surrounding Area

The site is located within an established leafy residential area near the township of Eltham, approximately 20km north-east of Melbourne CBD.

The site enjoys access to commercial and community facilities, open space and public transport including;

- Meruka Park – 200m
- Narreman Reserve – 100m
- Eltham Central Park – 1km
- Alistair Knox Park – 1.1km
- Susan Street Oval, Eltham Rugby Club – 1.3km
- Eltham Train Station – 1km
- Eltham Shopping area – 1.2km
- Employment Area – 800m
- Catholic Ladies College – 800m
- Eltham High School – 1.7km
- Sherbourne Primary School – 500m
- Bus Routes along Karringal Drive and Sherbourne Road – (typically 100-300m)

A Neighbourhood Character Plan is attached at Appendix D.

5. Proposal

The proposed subdivision seeks to subdivide the land into three lots and to remove native vegetation.

It is proposed to subdivide the parcel into three lots of the following areas;

- Lot 1: 1435m²
- Lot 2: 1390m²
- Lot 3: 1350m²

Building envelopes are proposed for lots 2 and 3. It is anticipated that future dwellings would be required to be wholly constructed within these building envelopes.

Lot 1 will contain the existing residence.

Lot 2 will be vacant and allow the construction of a dwelling within a building envelope area of 460m².
The building envelope will cover 33% of the entire area of lot 2.
The building envelope will cover 37% of lot 2 if the driveway is excluded from the calculations.

Lot 3 will be vacant and allow the construction of a dwelling within a building envelope area of 479m².
The building envelope will cover 35% of the entire area of lot 3.
The building envelope will cover 38% of lot 3 if the driveway is excluded from the calculations.

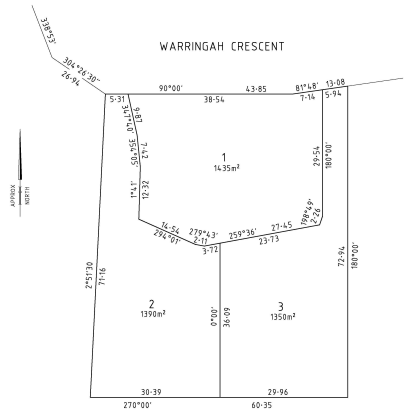
Proposed Vehicle Access

Lot 1
Lot 1 will utilise the existing western access point. Access to the existing residence will continue to be provided via the sealed driveway.

Lot 2
A 3 metre wide access point is proposed at the north-west corner of the site to provide vehicular access to lot 2. It is envisaged there will be no change to the streetscape as a result of this new access point.

Some rectification works will be required near the north-west corner of the site including reshaping of land and the removal of an iron shed. Lot 2 will then utilise the existing graded embankment that is situated to the south of the existing driveway.

Lot 3
The existing access point near the eastern boundary will be utilised by lot 3 and access to the rear of the property will be provided by the existing graded embankment.



Plan of proposed lot layout

A Design Response Plan is attached at Appendix E.

A Plan of Building Envelopes is attached at Appendix F.

A Plan of Proposed Subdivision is attached at Appendix G.

Vegetation

A detailed arboricultural assessment and report has been prepared by Stem Arboricultural Consultancy. A total of 68 trees were assessed with a retention value of low, medium and high assigned to each tree.

The retentions values assigned to were as follows;

Retention Value	Number of Trees
Low	38
Meduim	27
High	3

A total of 23 trees are proposed to be removed as part of this application, the majority of these are considered of low retention value. The following trees are proposed to be removed;

Tree No.	Common Name *(Botanical)*	HxW (m) DBH(cm)	Health	Structure	Form	Retention Value	Comments
4	Cherry Ballart *(Exocarpos cupressiformis)*	9 x 7 28	Good	Poor	Fair	Medium	
5	Cherry Ballart *(Exocarpos cupressiformis)*	5 x 3 10	Good	Fair	Fair	Medium	
11	Long Leaved Box *(Eucalyptus goniocalyx)*	14 x 10 28	Poor	Fair	Fair	Low	Stressed Tree
12	Long Leaved Box *(Eucalyptus goniocalyx)*	12 x 9 32	Poor	Poor	Poor	Low	Stressed Tree
13	Long Leaved Box *(Eucalyptus goniocalyx)*	13 x 7 32	Poor	Fair	Fair	Low	Stressed Tree
18	Long Leaved Box *(Eucalyptus goniocalyx)*	14 x 7 36	Fair	Poor	Fair	Low	Trunk Decay
19	Long Leaved Box *(Eucalyptus goniocalyx)*	13 x 13 47	Good	Fair	Poor	Low	Tension Wound Supressed Form
20	Yellow Box *(Eucalyptus melliodora)*	17 x 12 49	Good	Fair	Poor	Low	Stem Failure Decaying trunk
26	Long Leaved Box *(Eucalyptus goniocalyx)*	13 x 8 26	Poor	Fair	Fair	Low	Sparse Canopy Stressed Tree
28	Blackwood *(Acacia melanoxylon)*	4 x 4 11	Poor	Poor	Fair	Low	
29	Cherry Plum *(Prunus cerasifera)*	5 x 4 13	Good	Good	Good	Low	Environmental Weed
30	Blackwood *(Acacia melanoxylon)*	5 x 2 13	Poor	Poor	Poor	Low	
31	Blackwood	4 x 4	Poor	Poor	Fair	Low	

	(Acacia melanoxylon)	11					
34	Yellow Box *(Eucalyptus melliodora)*	18 x 18 53	Good	Poor	Poor	Low	Crowded acute stems
43	Blackwood *(Acacia melanoxylon)*	7 x 5 16	Fair	Fair	Fair	Medium	
45	Long Leaved Box *(Eucalyptus goniocalyx)*	12 x 4 25	Poor	Poor	Poor	Low	
46	Yellow Box *(Eucalyptus melliodora)*	14 x 6 22	Good	Fair	Poor	Low	Heavily supressed form
48	Candlebark *(Eucalyptus rubida)*	27 x 14 66	Fair	Fair	Poor	Medium	History of limb failures, cavities present
49	Yellow Box *(Eucalyptus melliodora)*	10 x 5 25	Good	Good	Fair	Meduim	
58	Yellow Box *(Eucalyptus melliodora)*	12 x 6 18	Fair	Good	Fair	Medium	Borer in lower trunk
62	Black Wattle *(Acacia mearnsii)*	10 x 7 23	Poor	Poor	Poor	Low	Senescent. Borers Limb Failure
65	Cherry Ballart *(Exocarpos cupressiformis)*	8 x 5 23	Poor	Poor	Fair	Low	

A Plan of Tree Locations is attached at Appendix H.

A copy of the Arboricultural Assessment and Report prepared by Stem Arboricultural Consultancy is attached at Appendix I.

6. Planning Scheme Controls

Zoning

**Vic Plan - Neighbourhood Residential Zone Map*

The land is zoned Neighbourhood Residential Zone – Schedule 1 (NRZ1) pursuant to the Nillumbik planning scheme.

Surrounding land is also within the same zone.

The purpose of the neighbourhood residential zone is:

- To implement the Municipal Planning Strategy and the Planning Policy Framework.
- To recognise areas of predominantly single and double storey residential development.
- To manage and ensure that development respects the identified neighbourhood character, heritage, environmental or landscape characteristics.
- To allow educational, recreational, religious, community and a limited range of other non-residential uses to serve local community needs in appropriate locations.

Pursuant to Clause 32.09-03 of the Nillumbik Planning Scheme a planning permit is required to subdivide land. An application for the subdivision of land within the Neighbourhood Residential Zone must comply with objectives of Clause 56 except for Clauses 56.02-1, 56.03-1, 56.03-4, 56.05-2, 56.06-1, 56.06-3 and 56.06-6.

Clause 32.09-3 also stipulates that an application to subdivide land that would create a vacant lot less than 400 square metres capable of development for a dwelling or residential building, must ensure that each vacant lot created less than 400 square metres contains at least 25 percent as garden area. Whilst it is considered that the minimum garden area is not relevant to this application it is anticipated that all lots would be able to comply with the minimum garden area requirement.

Clause 32.09-10 states that the maximum height of a dwelling must not exceed 9 metres and the building must contain no more than 2 storeys at any point. No new residences are proposed as part of this application, therefore it is anticipated that building heights would be assessed as part of any future permit application for a dwelling.

Clause 32.09-13 states that before deciding on an application, in addition to the decision guidelines in Clause 65, the responsible authority must consider, as appropriate:

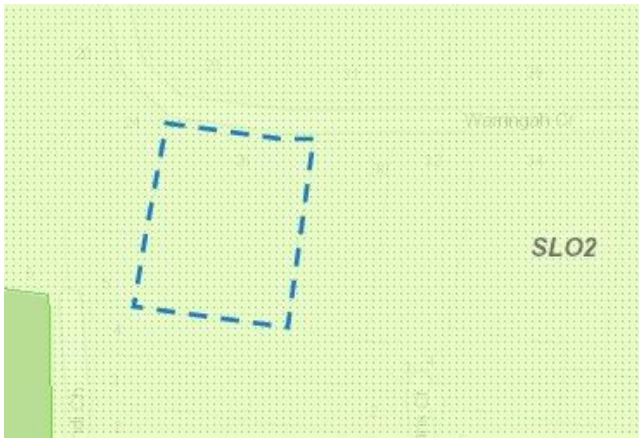
- The Municipal Planning Strategy and the Planning Policy Framework.
- The purpose of this zone.
- The objectives set out in the schedule to this zone.
- Any other decision guidelines specified in a schedule to this zone.
- The pattern of subdivision and its effect on the spacing of buildings.
- The objectives and standards of Clause 56.

Response to Zoning

The proposed subdivision demonstrates a high level of compliance with the requirements of the Neighbourhood Residential Zone. The site is conveniently located to existing infrastructure and services and will create two new lots that are consistent with surrounding subdivisions.

Overlays

The land is within a Significant Landscape Overlay – Schedule 2



**Vic Plan – Significant Landscape Overlay Map*

The purpose of the Significant Landscape Overlay (SLO) is to identify significant landscapes and to conserve and enhance the character of significant landscapes.

The key elements of SLO listed in Clause 1 (Schedule 2) are;

- The visual dominance of native vegetation including substantial indigenous trees and understorey species that creates a bushland character.
- Buildings are obscured from view from the street and are sited with minimal excavation and disturbance to the natural landform.
- Dwellings and other buildings are designed and coloured to blend in with the bushland landscape.
- Gardens are continuous with roadside and surrounding property vegetation where there are no solid fences and fencing, if present, is usually of post and wire construction.

The key elements of SLO listed in Clause 2 (Schedule 2) are;

- To provide for housing in a residential location in a bushland setting.
- To provide for sensitive siting of buildings and works, access and earthworks and by the restoration of native vegetation where considered appropriate.
- To provide for conservation and enhancement of the environmental values of the area.
- To ensure that the development of land and the removal of native vegetation are not detrimental to the natural environment and character of the area.
- To minimise the threats to the natural environment through the unnecessary removal of vegetation in these areas.

Pursuant to Clause 42.03-2 of the Nillumbik Planning Scheme a planning permit is required to remove, destroy or lop native vegetation. This does not apply to dead vegetation or vegetation that is identified as a pest plant in the Shire of Nillumbik Environmental Weed List 2009.

Clause 3 (Schedule 2) states that a permit is required to remove, destroy or lop native vegetation. This does not apply if;

- The lopping of vegetation is undertaken to assist its regeneration
- The vegetation is dead
- The vegetation is identified as a pest plant in the Shire of Nillumbik Environmental Weed List 2009

Clause 42.03-05 states that before deciding on an application, in addition to the decision guidelines in Clause 65, the responsible authority must consider, as appropriate:

- The Municipal Planning Strategy and Planning Policy Framework.
- The statement of environmental significance and the environmental objective contained in a schedule to this overlay.
- The need to remove, destroy or lop vegetation to create a defendable space to reduce the risk of bushfire to life and property.
- Any other matters specified in a schedule to this overlay

The land is within an Environmental Significance Overlay – Schedule 1

**Vic Plan – Environmental Significance Overlay Map*

The purpose of the Environmental Significance Overlay (ELO) is to identify and protect the biodiversity values of the area.

The environmental objectives of ELO listed in Clause 2 (Schedule 1) are;

- To protect and enhance sites of faunal and habitat significance identified in (Beardsell 1997) Sites of Faunal and Habitat Significance in North East Melbourne.
- To protect and enhance regional and strategic habitat links identified in (Beardsell 1997) Sites of Faunal and Habitat Significance in North East Melbourne.

Pursuant to Clause 42.01-2 of the Nillumbik Planning Scheme a planning permit is required to remove, destroy or lop native vegetation including dead vegetation.

Clause 3 (Schedule 2) states that a permit is required to remove, destroy or lop native vegetation. This does not apply if;

- The vegetation is dead. This exemption does not apply to standing dead trees with a trunk diameter of 40 centimetres or more at a height of 1.3 metres above ground level.
- The vegetation is identified as a pest plant in the Shire of Nillumbik Environmental Weed List 2009

Clause 42.01-05 states that before deciding on an application, in addition to the decision guidelines in Clause 65, the responsible authority must consider, as appropriate:

- The Municipal Planning Strategy and Planning Policy Framework.
- The statement of environmental significance and the environmental objective contained in a schedule to this overlay.
- The need to remove, destroy or lop vegetation to create a defendable space to reduce the risk of bushfire to life and property.
- Any other matters specified in a schedule to this overlay

The parcel is over 4000m^2 and is located within an Environmental Significance Overlay –Schedule 1. A Flora and Fauna Assessment and Native Vegetation Impact Assessment has been by prepared by Practical Ecology is attached at Appendix J.

Response to Overlays

The proposed lot layout respects the current features on the site. The layout allows for native vegetation to be retained and the trees that are proposed to be removed are generally of low retention value. No trees of high retention value are proposed to be removed nor are building envelopes proposed to be within their Tree Protection Zones. There is adequate space within the lots to replace any native vegetation that is to be removed.

The subdivision will not result in any significant change to the current streetscape and all vegetation along Warringah Crescent and inside the site frontage will remain.

All future building applications will require planning permits. This will provide Council with appropriate measures to ensure that any approved built form responds to the neighbourhood character and that all lots maintain the existing semi-bush environment.

7. Local Planning Policies

Clause 13.02 Bushfire Prone

The land is within a Bushfire Prone Area.

Clause 13.02-1S states the objective of Bushfire Planning is to strengthen the resilience of settlements and communities to bushfire through risk-based planning that prioritises the protection of human life.

Response to Clause 22.12

The subdivision will comply will Bushfire Planning by providing water storage such as rainwater tanks and satisfying all requirements for CFA.

Clause 22.12 – Neighbourhood Character Policy

The provisions of Neighbourhood Character Policy applies to subdivisions within Neighbourhood Residential Zones. The objectives of the policy are;

- To ensure that development is responsive to the preferred future character of the area.
- To retain and enhance the identified elements that contribute to the character of the area.
- To implement the recommendations of the Shire of Nillumbik Neighbourhood Character Study 2000 and the Nillumbik Residential Design Guidelines 2000.
- To recognize the potential for change as a result of new social and economic conditions, changing housing preferences and State and local housing policies.

Response to Clause 22.12

It is considered that the proposed subdivision complies with the Neighbourhood Character Policy. Planning permission has been granted for several subdivisions within close proximity to the subject site. The subdivision will not result in any significant change to the current streetscape.

8. Particular Provisions

Clause 52.17 – Native Vegetation

The provision of Native Vegetation seek to ensure native vegetation clearing does not result in a net loss to Victoria's biodiversity. 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) (Guidelines):

- Avoid the removal, destruction or lopping of native vegetation.
- Minimise impacts from the removal, destruction or lopping of native vegetation that cannot
- be avoided.
- Provide an offset to compensate for the biodiversity impact if a permit is granted to remove, destroy or lop native vegetation.

Clause 52.17-1 states that a permit is required to remove, destroy or lop native vegetation, including dead native vegetation. This is does not apply if;

- The table to Clause 52.17-7 specifically states that a permit is not required.
- A native vegetation precinct plan corresponding to the land is incorporated into this
- scheme and listed in the schedule to Clause 52.16.
- The removal, destruction or loping of native vegetation specified in the schedule to this clause.

Clause 52.17-5 specifies that the biodiversity impacts from the removal, destruction or lopping of native vegetation must be offset, in accordance with the Guidelines.

Clause 52.17-7 states the different exemptions to the planning permit requirement and this includes;

- Planted vegetation, native vegetation to be removed destroyed or lopped is exempt of planning permit requirement if it was either planted or grown as a result of direct seeding.
- Weeds, native vegetation to be removed destroyed or lopped is exempt of planning permit requirement if it was either planted or grown as a result of direct seeding.

Response to Clause 52.17

The proposed subdivision involves the removal of some native vegetation. The lot layout aims to minimise the amount of native vegetation to be removed.

There are twenty two trees that are proposed to be removed, many of which are in a state of decline. Of these twenty two trees sixteen have a low retention value (trees 11, 12, 13, 18, 19, 20, 26, 28, 29, 30, 31, 34, 45, 46, 62, 65) and six have a medium retention value (trees 4, 5, 43, 48, 49 and 58).

No trees of high retention value are proposed to be removed nor are building envelopes proposed to be within their Tree Protection Zones.

9. General Provision

Clause 65 (Decision Guidelines) provide that before deciding on an application the responsible authority must consider, as appropriate;

- The matters set out at Sections 60 of the Act
- The State Planning Policy Framework and the Local Planning Policy Framework, including the Municipal Strategic Statement and local planning policies.
- The purpose of the zone, overlay or other provision.
- Any matter to be considered in the zone, overlay or other provision.
- The orderly planning of the area.
- The effect on the amenity of the area.

10. Clause 56 Response

The layout of the subdivision has been designed in accordance with Rescode and has a high level of compliance with the relevant standards.

A full clause 56 Rescode assessment has been prepared and is attached at Appendix K.

11. Conclusion

The proposal to subdivide the land at 26 Warringah Crescent, Eltham into three lots is considered to be consistent with developments in the surrounding area and demonstrates a high level of compliance with the Nillumbik Planning Scheme.

The subdivision will add dwelling opportunities to this highly valued residential area of Eltham with accessibility to reserves, public transport, shops and schools all conveniently located from the site.

The proposed layout is respectful to the neighbourhood character and will not compromised the streetscape along Warringah Crescent nor cause any detriment to surrounding properties.

Although some native vegetation is proposed to be removed the majority of these trees are of low retention value. There is adequate space within the site for new planting that will likely be superior in quality when compared to the trees that are removed.

On the basis of the above it is considered appropriate that a permit be issued for a three lot subdivision and removal of native vegetation subject to the relevant conditions.

12. APPENDICES

A. Copy of Title and Title Sketch

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

VOLUME 08540 FOLIO 911 Security no : 124080335174M
Produced 20/11/2019 02:49 PM

LAND DESCRIPTION

Lot 6 on Plan of Subdivision 058605.
PARENT TITLE Volume 08049 Folio 875
Created by instrument B382551 23/03/1965

REGISTERED PROPRIETOR

Estate Fee Simple
Sole Proprietor
MARK EDWARD LENDON of 26 WARRINGAH CR ELTHAM NORTH
T432009D 25/11/1994

ENCUMBRANCES, CAVEATS AND NOTICES

MORTGAGE AM343060R 20/11/2015
WESTPAC BANKING CORPORATION

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

DIAGRAM LOCATION

SEE LP058605 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: 26 WARRINGAH CRESCENT ELTHAM VIC 3095

ADMINISTRATIVE NOTICES

NIL

eCT Control 16320Q WESTPAC BANKING CORPORATION
Effective from 22/10/2016

DOCUMENT END

Delivered from the LANDATA System by GlobalX Terrain Pty Ltd

LP58605
EDITION 2
APPROVED/O /2/65

PLAN OF SUBDIVISION

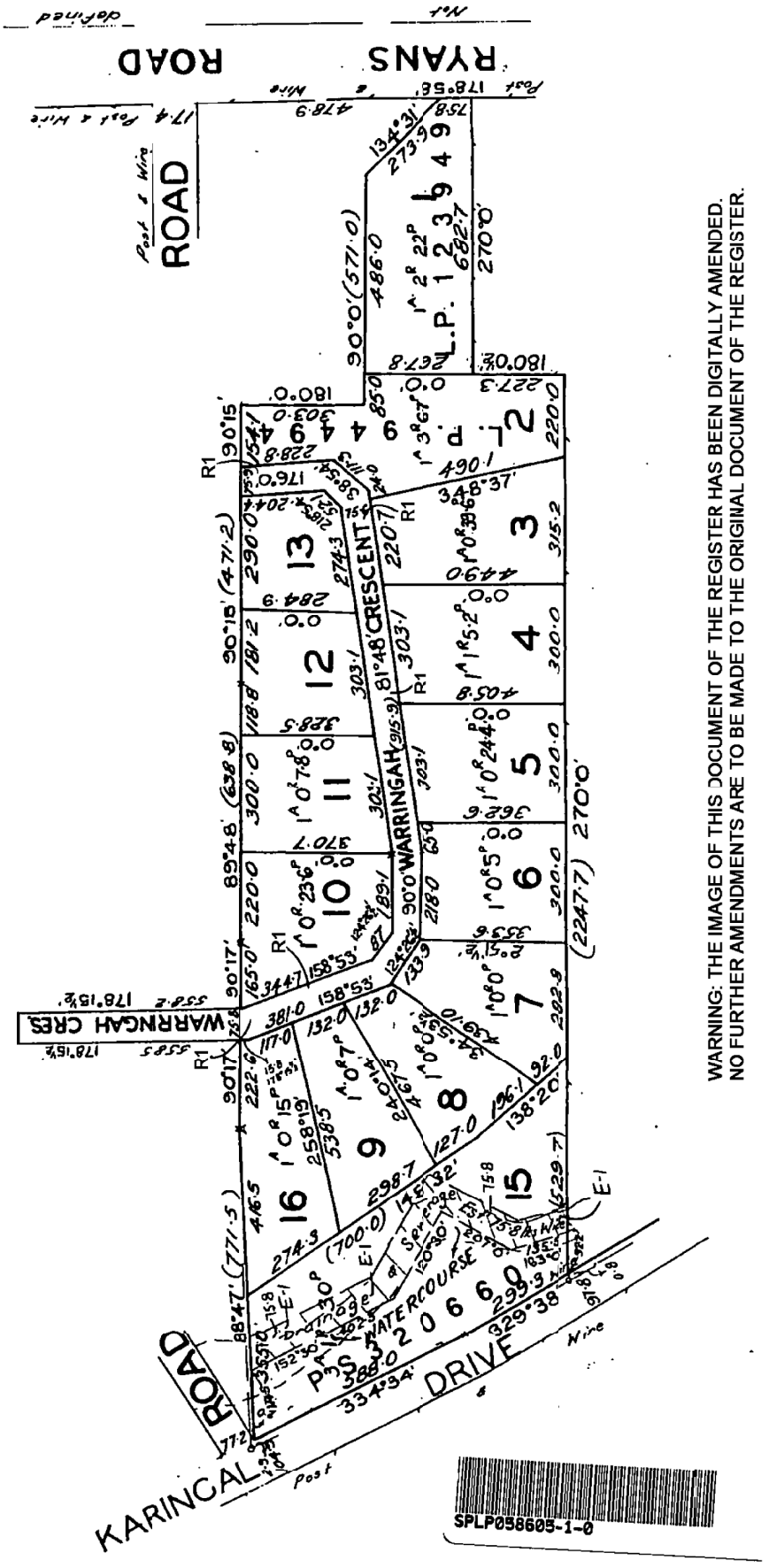
PART OF CROWN PORTION 3

PARISH OF NILLUMBIK

COUNTY OF EVELYN

Measurements are in Links
Conversion Factor
LINKS X0.201168 = METRES

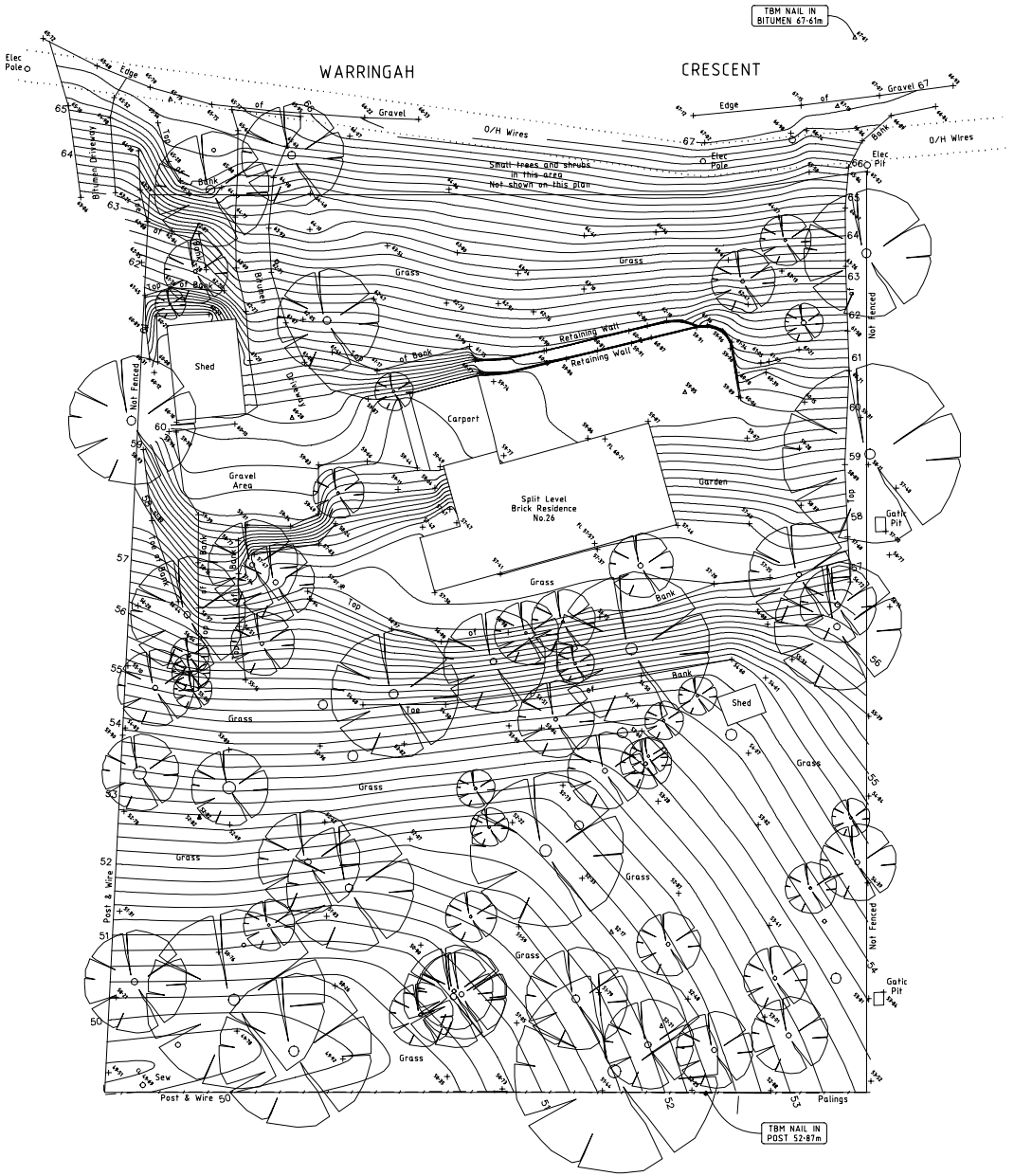
COLOUR CONVERSION
E-1 = BLUE
R1 = BROWN



SPLP058605-1-0

FOR APPROPRIATIONS, ETC.
SEE BACK HEREOF

B. Feature and Level Survey



NOTATIONS

The information shown on this plan is for general design works only. Any critical dimensions should be requested independently to this plan. Webster Survey Group accepts no responsibility for any manipulation of the digital information provided in this plan by others

Whilst every effort has been made to locate all feature details within the surveyed area Webster Survey Group will not be held responsible for features hidden, obscured or under construction at the time of survey.

No underground features have been located unless specifically shown

Levels shown on this plan are to Australian Height Datum vide NILLUMBIK PM 159 (R.L. 26.490m)

Contour interval 0.2 metres

Land Subject to Easements

Refer to Title

Property boundaries have been plotted from the DCMB by best fit with existing fencing. A title re-establishment survey has not been undertaken and easements have not been identified.

REVISIONS

Version	Description	Date

JOB TITLE
26 WARRINGAH CRESCENT ELTHAM 3095

DRAWING NAME
FEATURE & LEVEL SURVEY

DRAWING REFERENCE
16885

VERSION
01

LAND DESCRIPTION
LOT 6 ON LP 58605

DATE OF SURVEY
29/10/2019

ORIGINAL SHEET SIZE
A1

SHEET No
1 of 1

SCALE
1:200

2 0 2 4 6 8
LENGTHS ARE IN METRES

DRAWN BY
JL

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P.O Box 291, Eltham 3095
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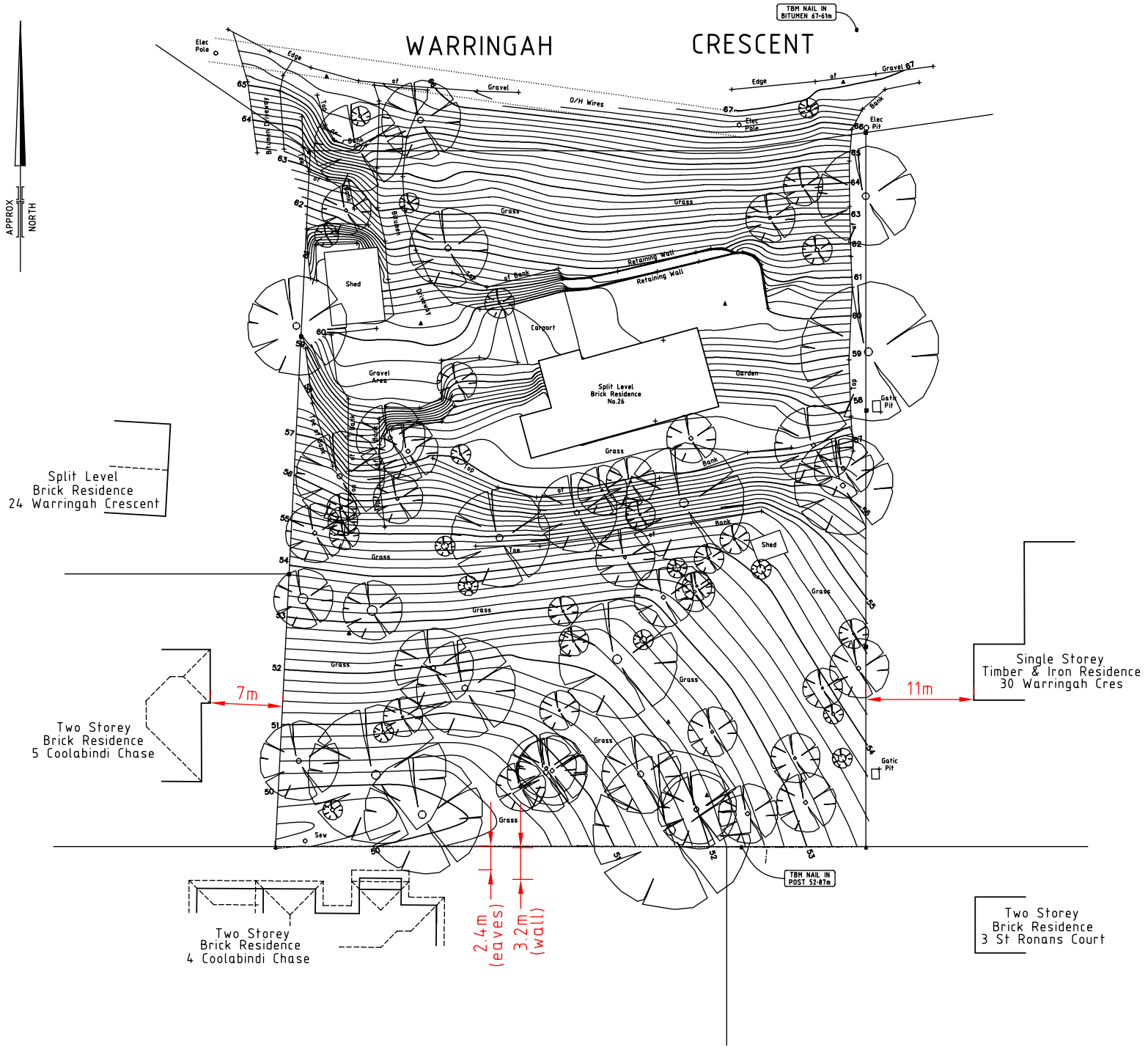

NOTATIONS

REVISIONS

Version	Description	Date

JOB TITLE
26 WARRINGAH CRESCENT
ELTHAM 3095

DRAWING NAME
ADJOINING PROPERTY SETBACKS

DRAWING REFERENCE *16885J*
VERSION *01*

LAND DESCRIPTION
LOT 6 ON LP 58605

DATE OF SURVEY
29/10/2019

ORIGINAL SHEET SIZE
A3

SHEET No
1 of 1

SCALE
1:400
2 0 2 4 6 8
LENGTHS ARE IN METRES

DRAWN BY
JL

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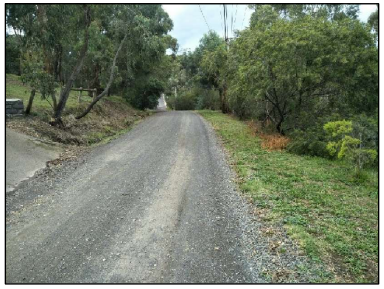
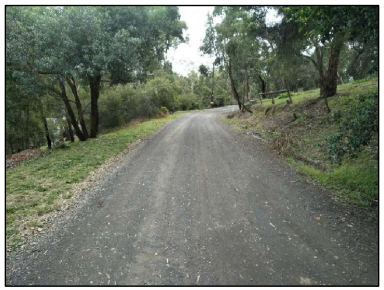
C. Photo Survey

1



View looking east along Warringah Crescent

2



View looking west along Warringah Crescent

3

View looking north along existing driveway

4

View looking north along graded embankment

5

View looking west at rear of site

6

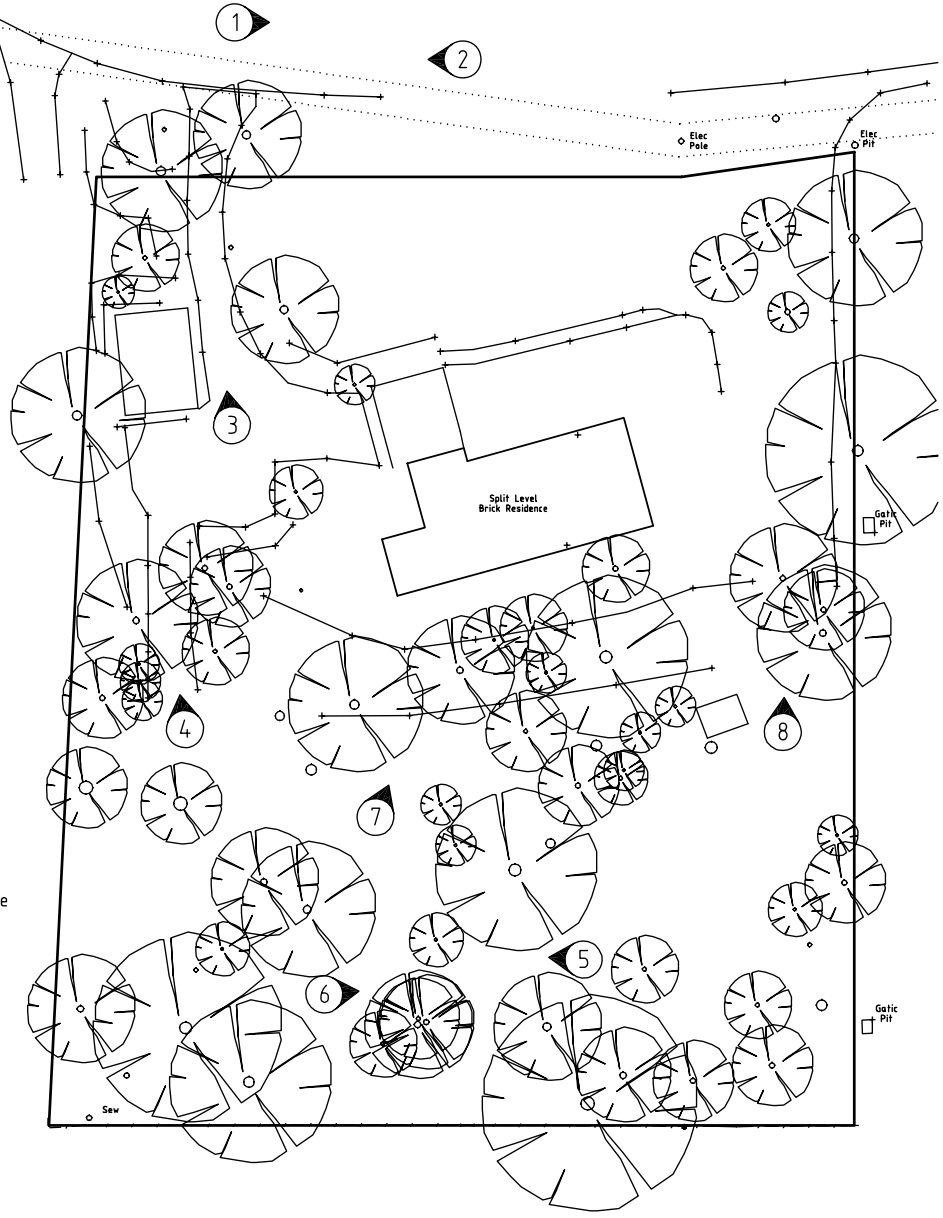
View looking east at rear of site

7

View looking north-east towards residence

8

View looking north along graded embankment



NOTATIONS

Direction and location of photographs shown by (2)

APPROX NORTH

REVISIONS

Version	Description	Date

JOB TITLE
26 WARRINGAH CRESCENT
ELTHAM 3095

DRAWING NAME
PHOTO SURVEY

DRAWING REFERENCE *16885K* **VERSION** *01*

LAND DESCRIPTION
LOT 6 ON LP 58605

DATE DRAWN
28/01/2020

ORIGINAL SHEET SIZE
A3

SHEET No
1 of 1

SCALE
1:400

DRAWN BY
JL

2 0 2 4 6 8
LENGTHS ARE IN METRES

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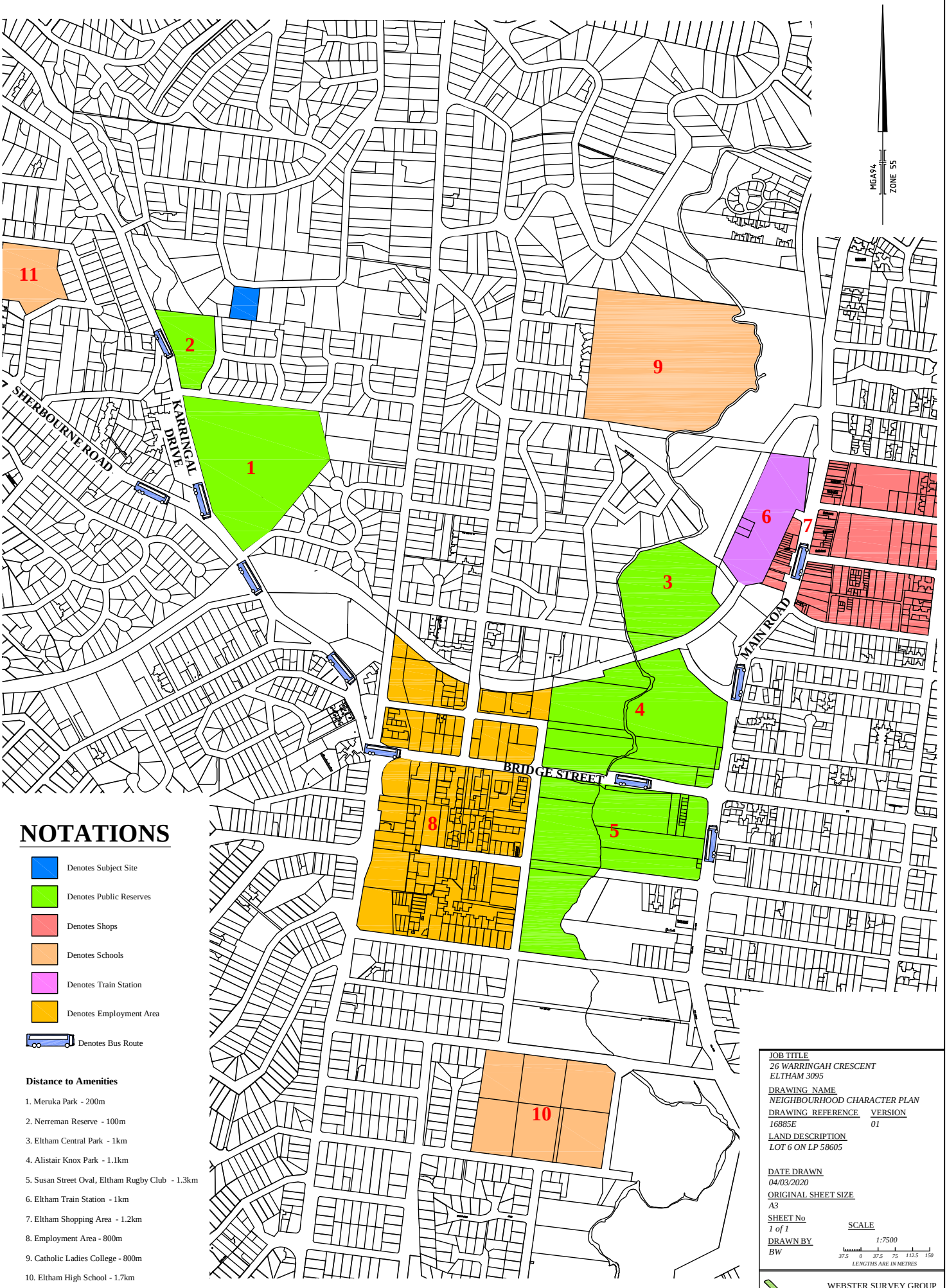
D. Neighbourhood Character Plan



NOTATIONS

- Denotes Subject Site
- Denotes Public Reserves
- Denotes Shops
- Denotes Schools
- Denotes Train Station
- Denotes Employment Area
- Denotes Bus Route

Distance to Amenities

1. Meruka Park - 200m
2. Nerreman Reserve - 100m
3. Eltham Central Park - 1km
4. Alistair Knox Park - 1.1km
5. Susan Street Oval, Eltham Rugby Club - 1.3km
6. Eltham Train Station - 1km
7. Eltham Shopping Area - 1.2km
8. Employment Area - 800m
9. Catholic Ladies College - 800m
10. Eltham High School - 1.7km
11. Sherbourne Primary School - 500m

JOB TITLE
26 WARRINGAH CRESCENT
ELTHAM 3095

DRAWING NAME
NEIGHBOURHOOD CHARACTER PLAN

DRAWING REFERENCE: *16885E*
VERSION: *01*

LAND DESCRIPTION
LOT 6 ON LP 58605

DATE DRAWN
04/03/2020

ORIGINAL SHEET SIZE
A3

SHEET No
1 of 1

SCALE
1:7500

DRAWN BY
BW

37.5 0 37.5 75 112.5 150
LENGTHS ARE IN METRES

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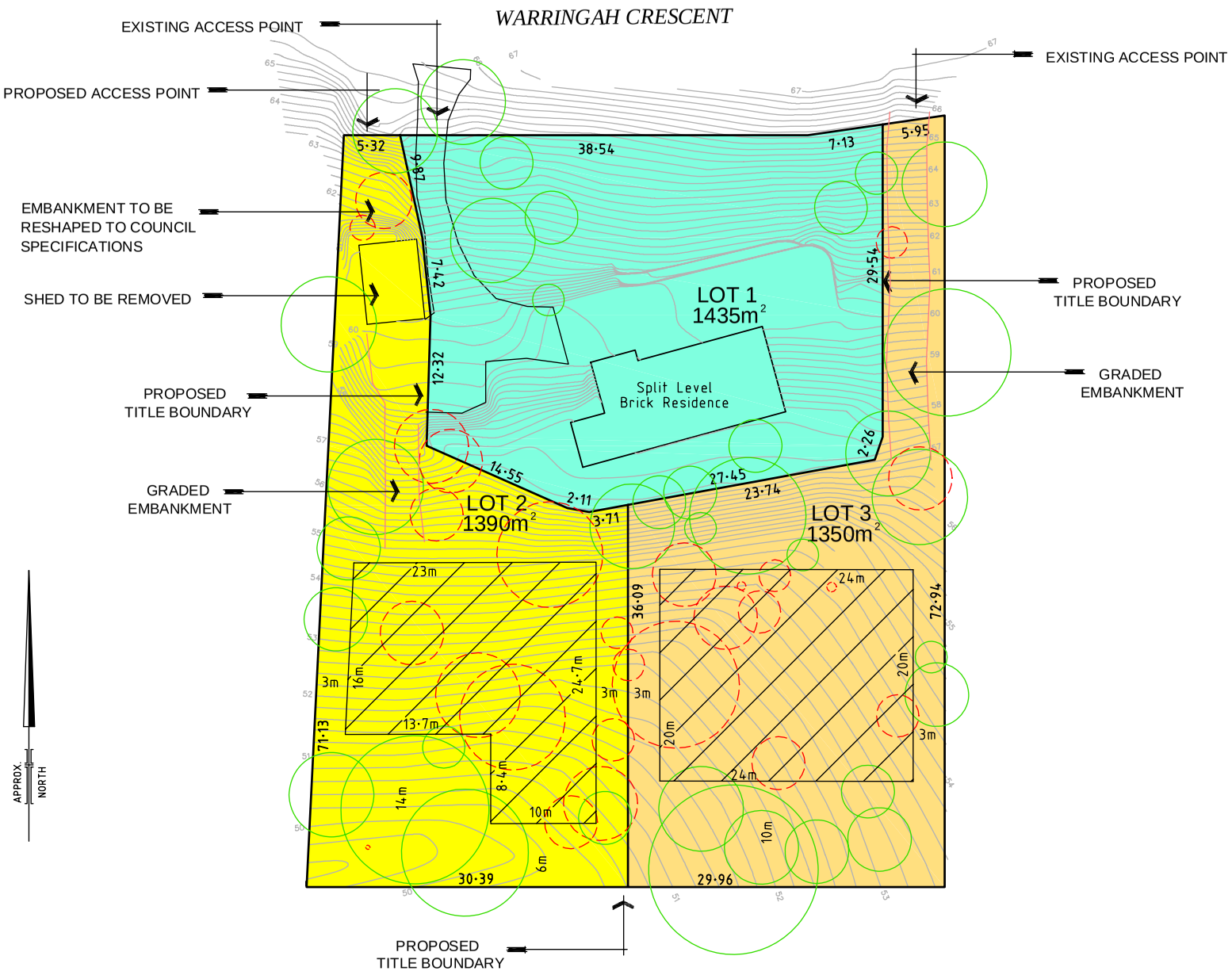
E. Design Response Plan



NOTATIONS

- Denotes tree to be retained
- Denotes tree to be removed
- Denotes Building Envelope

Levels shown on this plan are to Australian Height Datum vide NILLUMBIK PM 615 (R.L. 50.90m)

Contour interval 0.2 metres

REVISIONS

Version	Description	Date

JOB TITLE
26 WARRINGAH CRESCENT
ELTHAM 3095

DRAWING NAME
DESIGN RESPONSE

DRAWING REFERENCE
1688501H

VERSION
01

LAND DESCRIPTION
LOT 6 ON LP58605

DATE DRAWN
04/03/2020

ORIGINAL SHEET SIZE
A3

SHEET No
1 of 1

SCALE
1:250

DRAWN BY
BW

1.25 0 1.25 2.5 3.75 5
LENGTHS ARE IN METRES

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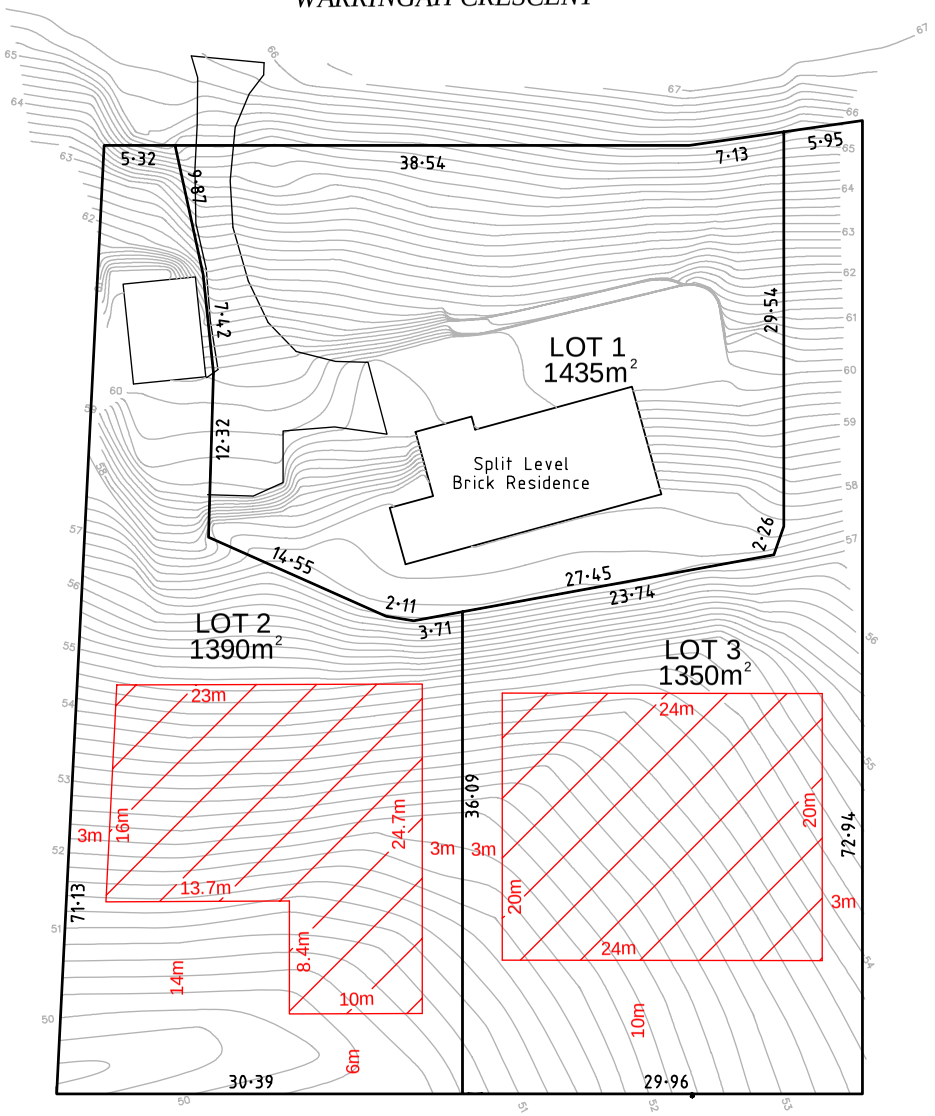
F. Plan of Building Envelopes

APPROX. NORTH

WARRINGAH CRESCENT



NOTATIONS

Denotes Building Envelope

Building Envelope Sizes

Lot 2: 462sq.m
Percentage of Lot Area: 33%

Lot 3: 479sq.m
Percentage of Lot Area: 35%

Levels shown on this plan are to Australian Height Datum vide NILLUMBIK PM 615 (R.L. 50.90m)

Contour interval 0.2 metres

REVISIONS

Version	Description	Date

JOB TITLE
26 WARRINGAH CRESCENT
ELTHAM 3095

DRAWING NAME
PLAN OF BUILDING ENVELOPES

DRAWING REFERENCE
1688501F

VERSION
01

LAND DESCRIPTION
LOT 6 ON LP58605

DATE DRAWN
04/03/2020

ORIGINAL SHEET SIZE
A3

SHEET No
1 of 1

SCALE
1:250

1.25 0 1.25 2.5 3.75 5
LENGTHS ARE IN METRES

DRAWN BY
BW

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G. Plan of Proposed Subdivision

PLAN OF SUBDIVISION

EDITION 1

PS 841442A

LOCATION OF LAND

PARISH: NILLUMBIK

TOWNSHIP:

SECTION:

CROWN ALLOTMENT:

CROWN PORTION: 3 (PART)

TITLE REFERENCE: VOL

LAST PLAN REFERENCE: VOL 8540 FOL 911

POSTAL ADDRESS: 26 WARRINGAH CRESCENT
(at time of subdivision) ELTHAM 3095

MGA CO-ORDINATES: E: 335580 ZONE: 55
(of approx centre of land in plan) N: 5824820 GDA 94

COUNCIL NAME: NILLUMBIK

VESTING OF ROADS AND/OR RESERVES

IDENTIFIER	COUNCIL/BODY/PERSON
NIL	NIL

NOTATIONS

DEPTH LIMITATION: DOES NOT APPLY

SURVEY:
This plan is based on survey.

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

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

In Proclaimed Survey Area No.

NOTATIONS

EASEMENT INFORMATION

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

EASEMENTS AND RIGHTS IMPLIED BY SECTION 12(2) OF THE SUBDIVISION ACT 1988 APPLY TO ALL THE LAND IN THIS PLAN

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

webster SURVEY GROUP

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Facsimile: (03) 9439 5288
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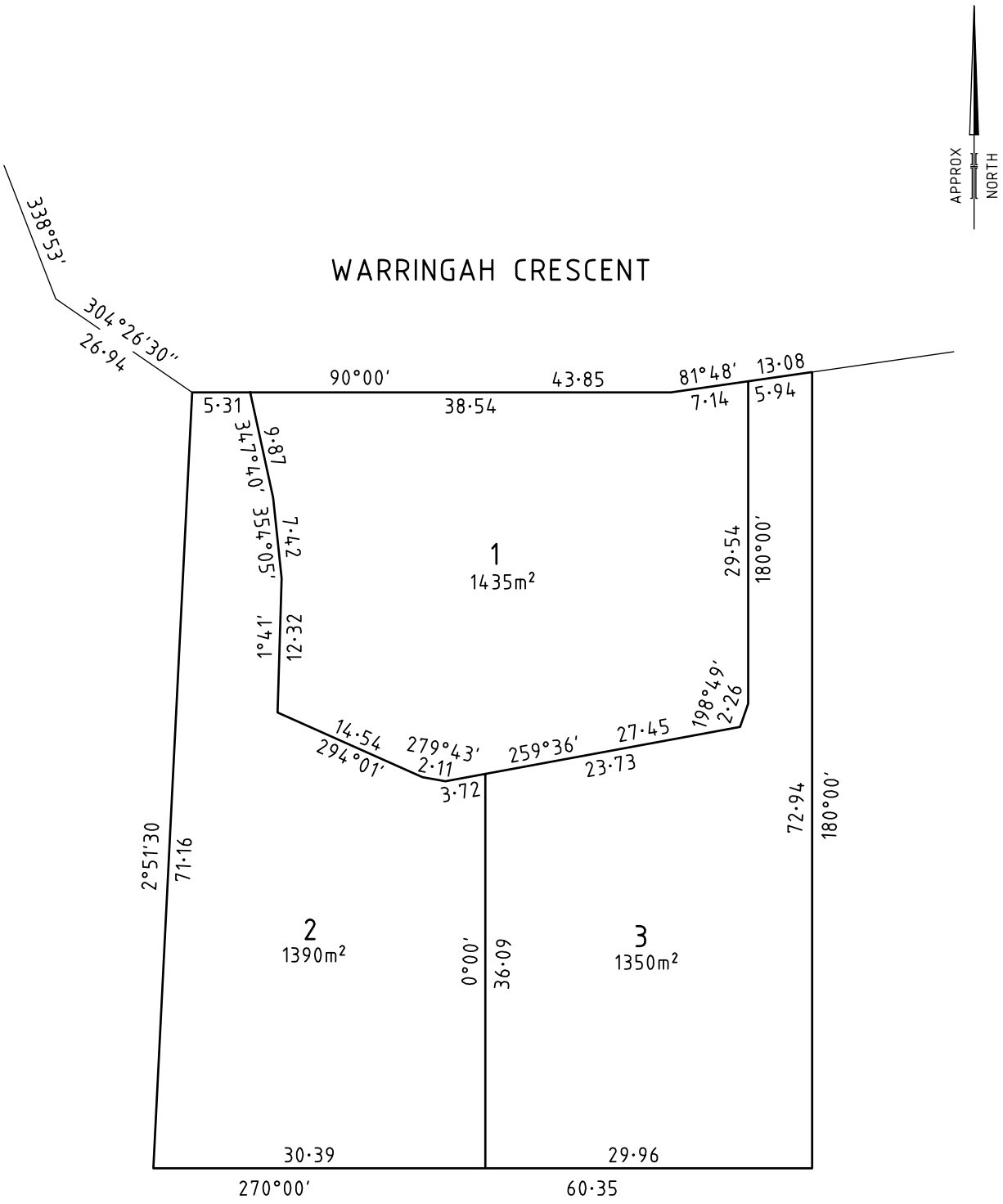
SURVEYORS FILE REF: 16885 02/04/20

ORIGINAL SHEET SIZE: A3

EVAN RHYS WEBSTER, VERSION 01

PS 841442A



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Facsimile: (03) 9439 5288
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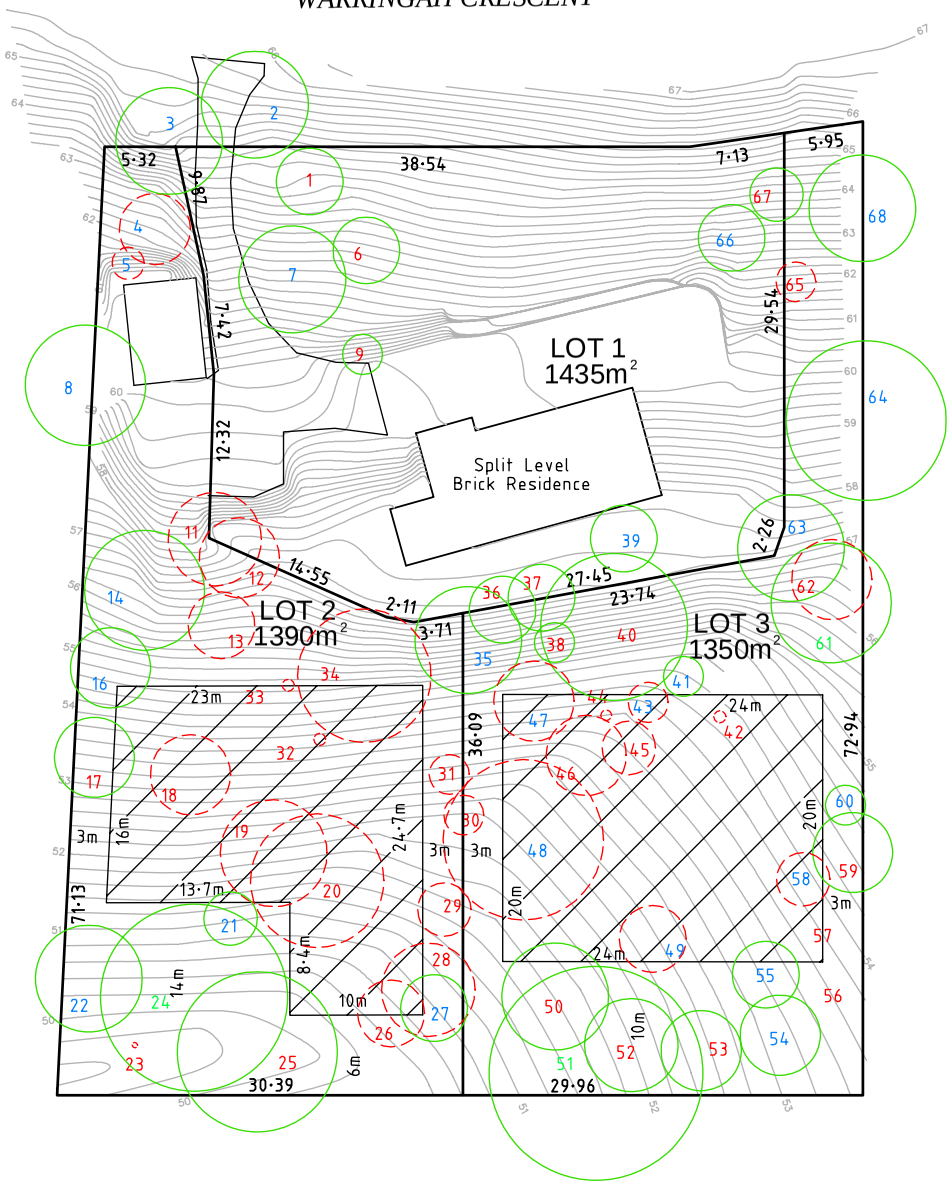
SCALE 1:400	4 0 4 8 12 16 LENGTHS ARE IN METRES	ORIGINAL SHEET SIZE: A3	SHEET 2
			SURVEYORS REF: 16885
EVAN RHYS WEBSTER, VERSION 01			

H. Plan of Tree Locations

APPROX. NORTH

WARRINGAH CRESCENT



NOTATIONS

Denotes tree to be retained

Denotes tree to be removed

Denotes Building Envelope

Tree Identification shown thus 2 indicates Low Retention Value
Tree Identification shown thus 2 indicates Medium Retention Valu
Tree Identification shown thus 2 indicates High Retention Value

Levels shown on this plan are to Australian Height Datum vide NILLUMBIK PM 615 (R.L. 50.90m)

Contour interval 0.2 metres

REVISIONS

Version	Description	Date

JOB TITLE
26 WARRINGAH CRESCENT
ELTHAM 3095

DRAWING NAME
PLAN OF TREE LOCATIONS

DRAWING REFERENCE
1688501G

VERSION
01

LAND DESCRIPTION
LOT 6 ON LP58605

DATE DRAWN
04/03/2020

ORIGINAL SHEET SIZE
A3

SHEET No
1 of 1

SCALE
1:250

1.25 0 1.25 2.5 3.75 5
LENGTHS ARE IN METRES

DRAWN BY
BW

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I. Arboricultural Assessment and Report

J. Flora and Fauna Assessment and Native Vegetation Impact Assessment

K. Clause 56 Rescode Assessment

CLAUSE 56 ASSESSMENT

26 Warringah Crescent, Eltham

56.03 Liveable and Sustainable Communities

56.03-5 Neighbourhood character objective To design subdivisions that respond to neighbourhood character.		
Standard C6	**Meets Standard?**	**Comment**
A subdivision should: • Respect the existing neighbourhood character. • Respond to and integrate with the surrounding urban environment. • Protect significant vegetation and features.	Yes	The proposed subdivision respects the existing neighbourhood character and is site responsive. Several parcels within close proximity to the subject site have been subdivided into lots of similar or smaller sizes.

56.04 Lot Design

56.04-1 Lot diversity and distribution objective To achieve housing objectives that support compact and walkable neighbourhoods and the efficient provision of public transport services. To provide higher housing densities within walking distance of activity centres. To achieve increased housing densities in designated growth areas. To provide a range of lot sizes to suit a variety of dwelling and household types.		
Standard C7	**Meets Standard?**	**Comment**
A subdivision should: • Provide a range and mix of lot sizes including lots suitable for development of single dwellings and higher density housing. • Lots 300 square metres or less should be located in and within 400 metres street walking distance of an activity centre.	Yes	The proposed subdivision is considered appropriate given the location of the site and surrounding properties.
56.04-2 Lot area and building envelopes objective To provide lots with areas and dimensions that enable the appropriate siting and construction of a dwelling, solar access, private open space, vehicle access and parking, water management, easements and the retention of significant vegetation and site features.		
Standard C8	**Meets Standard?**	**Comment**
An application to subdivide land that creates lots of less than 300 square metres should be accompanied by information that shows: • That the lots correspond with a development approved under this scheme, or	Yes	All lots are greater than 500sqm and are capable of containing a building envelope of 10 by 15 metres. Building envelopes have been shown on the proposed development plans

• That a dwelling may be constructed on each lot in accordance with the requirements of this scheme. Lots of between 300 square metres and 500 square metres should: • Contain a building envelope that is consistent with a development of the lot approved under this scheme, or • If no development of the lot has been approved under this scheme, contain a building envelope and be able to contain a rectangle measuring 10 metres by 15 metres, or 9 metres by 15 metres if a boundary wall is nominated as part of the building envelope. If lots of between 300 square metres and 500 square metres are proposed to contain dwelling that are built to the boundary, long axis of the lots should be within 30 degrees east and 20 degrees west of north unless there are significant physical constraints that make it difficult to achieve. Lots greater than 500 square metres should be able to contain a rectangle measuring 10 metres by 15 metres, and may contain a building envelope. A building envelope may specify or incorporate any relevant siting and design requirement. Any requirement should meet the relevant standards of Clause 54, unless: • The objectives of the relevant standards are met, and • The building envelope is shown as a restriction on a plan of subdivision registered under the Subdivision Act 1988, or is specified as a covenant in an agreement under Section 173 of the Act. Where a lot with a building envelope adjoins a lot that is not on the same plan of subdivision or is not subject to the same agreement relating to the relevant building envelope: • The building envelope must meet Standards A10 and A11 of Clause 54 in relation to the adjoining lot, and • The building envelope must not regulate siting matters covered by Standards A12 to A15 (inclusive) of Clause 54 in relation to the adjoining lot. This should be specified in the relevant plan of subdivision or agreement. Lot dimensions and building envelopes should protect: • Solar access for future dwellings and support siting and design of dwellings that		

achieve the energy rating requirements of the Building Regulations. • Existing or proposed easements on lots. • Significant vegetation and site features.		
56.04-3 Solar orientation of lots objective To provide good solar orientation of lots and solar access for future dwellings.		
Standard C9	**Meets Standard?**	**Comment**
Unless the site is constrained by topography or other site conditions, at least 70 percent of lots should have appropriate solar orientation. Lots have appropriate solar orientation when: • The long axis of lots are within the range N20 degrees west to N30 degrees east, or E20 degrees north to E30 degrees south. • Lots between 300 square metres and 500 square metres are proposed to contain dwellings that are built to the boundary, the long axis of the lots should be within 30 degrees east and 20 degrees west of north. • Dimensions of lots are adequate to protect solar access to the lot, taking into account likely dwelling size and the relationship of each lot to the street.	Yes	The proposed subdivision responds to the topography of the land and achieves good solar orientation.
56.04-4 Street orientation objective To provide a lot layout that contributes to community social interaction, personal safety and proposed security.		
Standard C10	**Meets Standard?**	**Comment**
A subdivision should increase visibility and surveillance by: • Ensuring lots front all roads and streets and avoid the side or rear of lots being oriented to connector streets and arterial roads. • Providing lots of 300 square metres or less in area and lots for 2 or more dwellings around activity centres and public open space. • Ensuring streets and houses look onto public open space and avoiding side and rears of lots along public open space boundaries. • Providing roads and streets along public open space boundaries.	Yes	All lots will have direct access to Warringah Crescent.
56.04-5 Common area objective To identify common areas and the purpose for which the area is commonly held. To ensure the provision of common area is appropriate and that necessary management arrangements are in place. To maintain direct public access throughout the neighbourhood street network.		
Standard C11	**Meets Standard?**	**Comment**
An application to subdivide land that creates common land must be accompanied by a plan and report identifying: • The common area to be owned by the	N/A	There are no common areas within the proposed development.

body corporate. • The proposed arrangements including maintenance for streets and open spaces to be commonly held.		

56.05 Urban Landscape

56.05-1 Integrated urban landscape objective

To provide attractive and continuous landscaping in streets and public open spaces that contribute to the character and identity of new neighbourhoods and urban places or to existing or preferred neighbourhood character in existing urban areas.

To incorporate natural and cultural features in the design of streets and public open space where appropriate.

To protect and enhance native habitat and discourage the planting and spread of noxious weeds.

To provide for integrated water management systems and contribute to drinking water conservation.

Standard C12	**Meets Standard?**	**Comment**
An application to subdivide that creates streets or public open space should be accompanied by a landscape design. The landscape design should: • Implement any relevant streetscape, landscape, urban design or native vegetation precinct plan, strategy or policy for the area set out in this scheme. • Create attractive landscapes that visually emphasise streets and public open spaces. • Respond to the site and context description for the site and surrounding area. • Maintain significant vegetation where possible within an urban context. • Take account of physical features of the land including landform soil and climate. The landscape design must include a maintenance plan that sets out maintenance responsibilities, requirements and costs.	Yes	The proposed subdivision takes into account the existing features of the site and protects the majority of native vegetation. There is an opportunity for replanting to ensure the site reflects the semi-bush character of the area.

56.06 Access and Mobility Management

56.06-2 Walking and cycling objectives

To contribute to community health and well being by encouraging walking and cycling as part of the daily lives of residents, employees and visitors.

To provide safe and direct movement through and between neighbourhoods by pedestrians and cyclists.

To reduce car use, greenhouse gas emissions and air pollution.

Standard C15	**Meets Standard?**	**Comment**
The walking and cycling network should be designed to: • Implement any relevant regional and local walking and cycling strategy, plan or policy for the area set out in this scheme. • Link to any existing pedestrian and cycling networks. • Provide safe walkable distances to activity	Yes	The surrounding area is established and the subdivision will utilise the networks already established.

centres, community facilities, public transport stops and public open spaces. • Provide an interconnected and continuous network of safe, efficient and convenient footpaths, shared paths, cycle paths and cycle lanes based primarily on the network of arterial roads, neighbourhood streets and regional public open spaces. • Provide direct cycling routes for regional journeys to major activity centres, community facilities, public transport and other regional activities and for regional recreational cycling. • Ensure safe street and road crossings including the provision of traffic controls where required. • Provide an appropriate level of priority for pedestrians and cyclists. • Have natural surveillance along streets and from abutting dwellings and be designed for personal safety and security particularly at night. • Be accessible to people with disabilities.		
56.06-4 Neighbourhood street network objective To provide for direct, safe and easy movement through and between neighbourhoods for pedestrians, cyclists, public transport and other motor vehicles using the neighbourhood street network.		
Standard C17	**Meets Standard?**	**Comment**
The neighbourhood street network must: • Take account of the existing mobility network of arterial roads, neighbourhood streets, cycle paths, cycle paths, footpaths and public transport routes. • Provide clear physical distinctions between arterial roads and neighbourhood street types. • Comply with the Roads Corporation's arterial road access management policies. • Provide an appropriate speed environment and movement priority for the safe and easy movement of pedestrians and cyclists and for accessing public transport. • Provide safe and efficient access to activity centres for commercial and freight vehicles. • Provide safe and efficient access to all lots for service and emergency vehicles. • Provide safe movement for all vehicles. • Incorporate any necessary traffic control measures and traffic management infrastructure. The neighbourhood street network should be designed to: • Implement any relevant transport strategy, plan or policy for the area set out in this scheme. • Include arterial roads at intervals of	Yes	The surrounding area is established and the subdivision will utilise the networks already established.

approximately 1.6 kilometres that have adequate reservation widths to accommodate long term movement demand. • Include connector streets approximately halfway between arterial roads and provide adequate reservation widths to accommodate long term movement demand. • Ensure connector streets align between neighbourhoods for direct and efficient movement of pedestrians, cyclists, public transport and other motor vehicles. • Provide an interconnected and continuous network of streets within and between neighbourhoods for use by pedestrians, cyclists, public transport and other vehicles. • Provide an appropriate level of local traffic dispersal. • Indicate the appropriate street type. • Provide a speed environment that is appropriate to the street type. • Provide a street environment that appropriately manages movement demand (volume, type and mix of pedestrians, cyclists, public transport and other motor vehicles). • Encourage appropriate and safe pedestrian, cyclist and driver behaviour. • Provide safe sharing of access lanes and access places by pedestrians, cyclists and vehicles. • Minimise the provision of culs-de-sac. • Provide for service and emergency vehicles to safely turn at the end of a dead-end street. • Facilitate solar orientation of lots. • Facilitate the provision of the walking and cycling network, integrated water management systems, utilities and planting of trees. • Contribute to the area's character and identity. • Take account of any identified significant features.		

56.06-5 Walking and cycling network detail objectives

To design and construct footpaths, shared path and cycle path networks that are safe, comfortable, well constructed and accessible for people with disabilities.

To design footpaths to accommodate wheelchairs, prams, scooters and other footpath bound vehicles.

Standard C18	**Meets Standard?**	**Comment**
Footpaths, shared paths, cycle paths and cycle lanes should be designed to: • Be part of a comprehensive design of the road or street reservation. • Be continuous and connect. • Provide for public transport stops, street	Yes	The surrounding area is established and the subdivision will utilise the networks already established.

crossings for pedestrians and cyclists and kerb crossovers for access to lots. • Accommodate projected user volumes and mix. • Meet the requirements of Table C1. • Provide pavement edge, kerb, channel and crossover details that support safe travel for pedestrians, footpath bound vehicles and cyclists, perform required drainage functions and are structurally sound. • Provide appropriate signage. • Be constructed to allow access to lots without damage to the footpath or shared path surfaces. • Be constructed with a durable, non-skid surface. • Be of a quality and durability to ensure: o Safe passage for pedestrians, cyclists, footpath bound vehicles and vehicles. o Discharge of urban run-off. o Preservation of all-weather access. o Maintenance of a reasonable, comfortable riding quality. o A minimum 20 year life span. • Be accessible to people with disabilities and include tactile ground surface indicators, audible signals and kerb ramps required for the movement of people with disabilities.		
56.06-7 Neighbourhood street network detail objective To design and construct street carriageways and verges so that the street geometry and traffic speeds provide an accessible and safe neighbourhood street system for all users.		
Standard C20	**Meets Standard?**	**Comment**
The design of streets and roads should: • Meet the requirements of Table C1. Where the widths of access lanes, access places, and access streets do not comply with the requirements of Table C1, the requirements of the relevant fire authority and roads authority must be met. • Provide street blocks that are generally between 120 metres and 240 metres in length and generally between 60 metres to 120 metres in width to facilitate pedestrian movement and control traffic speed. • Have verges of sufficient width to accommodate footpaths, shared paths, cycle paths, integrated water management, street tree planting, lighting and utility needs. • Have street geometry appropriate to the street type and function, the physical land characteristics and achieve a safe environment for all users. • Provide a low-speed environment while	N/A	No new street carriageways are proposed to be constructed.

allowing all road users to proceed without unreasonable inconvenience or delay.
• Provide a safe environment for all street users applying speed control measures where appropriate.
• Ensure intersection layouts clearly indicate the travel path and priority of movement for pedestrians, cyclists and vehicles.
• Provide a minimum 5 metre by 5 metre corner splay at junctions with arterial roads and a minimum 3 metre by 3 metre corner splay at other junctions unless site conditions justify a variation to achieve safe sight lines across corners.
• Ensure streets are of sufficient strength to:
  ○ Enable the carriage of vehicles.
  ○ Avoid damage by construction vehicles and equipment.
• Ensure street pavements are of sufficient quality and durability for the:
  ○ Safe passage of pedestrians, cyclists and vehicles.
  ○ Discharge of urban run-off.
  ○ Preservation of all-weather access and maintenance of a reasonable, comfortable riding quality.
• Ensure carriageways of planned arterial roads are designed to the requirements of the relevant road authority.
• Ensure carriageways of neighbourhood streets are designed for a minimum 20 year life span.
• Provide pavement edges, kerbs, channel and crossover details designed to:
  ○ Perform the required integrated water management functions.
  ○ Delineate the edge of the carriageway for all street users.
  ○ Provide efficient and comfortable access to abutting lots at appropriate locations.
  ○ Contribute to streetscape design.
• Provide for the safe and efficient collection of waste and recycling materials from lots.
• Be accessible to people with disabilities.
 	
A street detail plan should be prepared that shows, as appropriate:
• The street hierarchy and typical cross-sections for all street types.
• Location of carriageway pavement, parking, bus stops, kerbs, crossovers, footpaths, tactile surface indicators, cycle paths and speed control and traffic management devices.
• Water sensitive urban design features.		

• Location and species of proposed street trees and other vegetation. • Location of existing vegetation to be retained and proposed treatment to ensure its health. • Any relevant details for the design and location of street furniture, lighting, seats, bus stops, telephone boxes and mailboxes.		
56.06-8 Lot access objective To provide for safe vehicle access between roads and lots.		
Standard C21	**Meets Standard?**	**Comment**
Vehicle access to lots abutting arterial roads should be provided from service roads, side or rear access lanes, access places or access streets where appropriate and in accordance with the access management requirements of the relevant roads authority. Vehicle access to lots of 300 square metres or less in area and lots with a frontage of 7.5 metres or less should be provided via rear or side access lanes, places or streets. The design and construction of a crossover should meet the requirements of the relevant road authority.	Yes	The subdivision proposes an additional crossover, the design will be to the satisfaction of Council.

56.07 Integrated Water Management

56.07-1 Drinking water supply objectives To reduce the use of drinking water. To provide an adequate, cost-effective supply of drinking water.		
Standard C22	**Meets Standard?**	**Comment**
The supply of drinking water must be: • Designed and constructed in accordance with the requirements and to the satisfaction of the relevant water authority. • Provided to the boundary of all lots in the subdivision to the satisfaction of the relevant water authority.	Yes	Drinking water supply will be provided in accordance with all relevant requirements and to the satisfaction of the water authority and Council.
56.07-2 Reused and recycled water objectives To provide for the substitution of drinking water for non-drinking purposes with reused and recycled water.		
Standard C23	**Meets Standard?**	**Comment**
Reused and recycled water supply systems must be: • Designed, constructed and managed in accordance with the requirements and to the satisfaction of the relevant water authority, Environment Protection Authority and Department of Human Services. • Provided to the boundary of all lots in the subdivision where required by the relevant water authority.	N/A	Given the scale of the proposal it is not appropriate to incorporate recycled water in the design.

56.07-3 Waste water management objective To provide a waste water system that is adequate for the maintenance of public health and the management of effluent in an environmentally friendly manner.		
Standard C24	**Meets Standard?**	**Comment**
Waste water systems must be: • Designed, constructed and managed in accordance with the requirements and to the satisfaction of the relevant water authority and the Environment Protection Authority. • Consistent with any relevant approved domestic waste water management plan. Reticulated waste water systems must be provided to the boundary of all lots in the subdivision where required by the relevant water authority.	Yes	All waste water systems will be constructed in accordance with all relevant requirements and to the satisfaction of Council.
56.07-4 Urban run-off management objectives To minimise damage to properties and inconvenience to residents from urban run-off. To ensure that the street operates adequately during major storm events and provides for public safety. To minimise increases in stormwater run-off and protect the environmental values and physical characteristics of receiving waters from degradation by urban run-off.		
Standard C25	**Meets Standard?**	**Comment**
The urban stormwater management system must be: • Designed and managed in accordance with the requirements and to the satisfaction of the relevant drainage authority. • Designed and managed in accordance with the requirements and to the satisfaction of the water authority where reuse of urban run-off is proposed. • Designed to meet the current best practice performance objectives for stormwater quality as contained in the Urban Stormwater – Best Practice Environmental Management Guidelines (Victorian Stormwater Committee 1999) as amended. • Designed to ensure that flows downstream of the subdivision site are restricted to predevelopment levels unless increased flows are approved by the relevant drainage authority and there are no detrimental downstream impacts. The stormwater management system should be integrated with the overall development plan including the street and public open space networks and landscape design. For all storm events up to and including the 20% Average Exceedence Probability (AEP) standard: • Stormwater flows should be contained within the drainage system to the	Yes Yes	All stormwater drainage systems will be constructed in accordance with all relevant requirements and to the satisfaction of Council.

requirements of the relevant authority. • Ponding on roads should not occur for longer than 1 hour after the cessation of rainfall. For storm events greater than 20% AEP and up to and including 1% AEP standard: • Provision must be made for the safe and effective passage of stormwater flows. • All new lots should be free from inundation or to a lesser standard of flood protection where agreed by the relevant floodplain management authority. • Ensure that streets, footpaths and cycle paths that are subject to flooding meet the safety criteria da Vave < 0.35 m2/s (where, da = average depth in metres and Vave = average velocity in metres per second). The design of the local drainage network should: • Ensure run-off is retarded to a standard required by the responsible drainage authority. • Ensure every lot is provided with drainage to a standard acceptable to the relevant drainage authority. Wherever possible, run-off should be directed to the front of the lot and discharged into the street drainage system or legal point of discharge. • Ensure that inlet and outlet structures take into account the effects of obstructions and debris build up. Any surcharge drainage pit should discharge into an overland flow in a safe and predetermined manner. • Include water sensitive urban design features to manage run-off in streets and public open space. Where such features are provided, an application must describe maintenance responsibilities, requirements and costs. Any flood mitigation works must be designed and constructed in accordance with the requirements of the relevant floodplain management authority.	Yes Yes	

56.08 Site Management

56.08-1 Site management objectives To protect drainage infrastructure and receiving waters from sedimentation and contamination. To protect the site and surrounding area from environmental degradation or nuisance prior to and during construction of subdivision works. To encourage the re-use of materials from the site and recycled materials in the construction of subdivisions

where practicable.		
Standard C26	**Meets Standard?**	**Comment**
A subdivision application must describe how the site will be managed prior to and during the construction period and may set out requirements for managing: • Erosion and sediment. • Dust. • Run-off. • Litter, concrete and other construction wastes. • Chemical contamination. • Vegetation and natural features planned for retention. Recycled material should be used for the construction of streets, shared paths and other infrastructure where practicable.	Yes	All required documentation will be prepared and submitted to Council for approval prior to any construction on site.

56.09 Utilities

56.09-1 Shared trenching objectives To maximise the opportunities for shared trenching. To minimise constraints on landscaping within street reserves.		
Standard C27	**Meets Standard?**	**Comment**
Reticulated services for water, gas, electricity and telecommunications should be provided in shared trenching to minimise construction costs and land allocation for underground services.	Yes	Trench sharing will be provided where practical.
56.09-2 Electricity, telecommunications and gas objectives To provide public utilities to each lot in a timely, efficient and cost effective manner. To reduce greenhouse gas emissions by supporting generation and use of electricity from renewable sources.		
Standard C28	**Meets Standard?**	**Comment**
The electricity supply system must be designed in accordance with the requirements of the relevant electricity supply agency and be provided to the boundary of all lots in the subdivision to the satisfaction of the relevant electricity authority. Arrangements that support the generation or use of renewable energy at a lot or neighbourhood level are encouraged. The telecommunication system must be designed in accordance with the requirements of the relevant telecommunications servicing agency and should be consistent with any approved strategy, policy or plan for the provision of advanced telecommunications infrastructure, including fibre optic technology. The telecommunications system must be provided to the boundary of all lots in the subdivision to the satisfaction of the relevant telecommunications servicing authority.	Yes	New service connections for electricity, telecommunications and gas and will be constructed in accordance with all relevant requirements and to the satisfaction of relevant authorities.

Where available, the reticulated gas supply system must be designed in accordance with the requirements of the relevant gas supply agency and be provided to the boundary of all lots in the subdivision to the satisfaction of the relevant gas supply agency.		
56.09-3 Fire hydrants objective To provide fire hydrants and fire plugs in positions that enable fire fighters to access water safely, effectively and efficiently.		
Standard C29	**Meets Standard?**	**Comment**
Fire hydrants should be provided: • A maximum distance of 120 metres from the rear of the each lot. • No more than 200 metres apart. • Hydrants and fire plugs must be compatible with the relevant fire service equipment.	N/A	Given the scale of the proposal it is not appropriate to incorporate new fire hydrants in the design.
56.09-4 Public lighting objective To provide public lighting to ensure the safety of pedestrians, cyclists and vehicles. To provide pedestrians with a sense of personal safety at night. To contribute to reducing greenhouse gas emissions and to saving energy.		
Standard C30	**Meets Standard?**	**Comment**
Public lighting should be provided to streets, footpaths, public telephones, public transport stops and to major pedestrian and cycle paths including public open spaces that are likely to be well used at night to assist in providing safe passage for pedestrians, cyclists and vehicles. Public lighting should be designed in accordance with the relevant Australian Standards. Public lighting should be consistent with any strategy, policy or plan for the use of renewable energy and energy efficient fittings.	N/A	Given the scale of the proposal it is not appropriate to incorporate public lighting in the design.

CLAUSE 56 ASSESSMENT

26 Warringah Crescent, Eltham

56.03 Liveable and Sustainable Communities

56.03-5 Neighbourhood character objective To design subdivisions that respond to neighbourhood character.		
Standard C6	**Meets Standard?**	**Comment**
A subdivision should: • Respect the existing neighbourhood character. • Respond to and integrate with the surrounding urban environment. • Protect significant vegetation and features.	Yes	The proposed subdivision respects the existing neighbourhood character and is site responsive. Several parcels within close proximity to the subject site have been subdivided into lots of similar or smaller sizes.

56.04 Lot Design

56.04-1 Lot diversity and distribution objective To achieve housing objectives that support compact and walkable neighbourhoods and the efficient provision of public transport services. To provide higher housing densities within walking distance of activity centres. To achieve increased housing densities in designated growth areas. To provide a range of lot sizes to suit a variety of dwelling and household types.		
Standard C7	**Meets Standard?**	**Comment**
A subdivision should: • Provide a range and mix of lot sizes including lots suitable for development of single dwellings and higher density housing. • Lots 300 square metres or less should be located in and within 400 metres street walking distance of an activity centre.	Yes	The proposed subdivision is considered appropriate given the location of the site and surrounding properties.
56.04-2 Lot area and building envelopes objective To provide lots with areas and dimensions that enable the appropriate siting and construction of a dwelling, solar access, private open space, vehicle access and parking, water management, easements and the retention of significant vegetation and site features.		
Standard C8	**Meets Standard?**	**Comment**
An application to subdivide land that creates lots of less than 300 square metres should be accompanied by information that shows: • That the lots correspond with a development approved under this scheme, or	Yes	All lots are greater than 500sqm and are capable of containing a building envelope of 10 by 15 metres. Building envelopes have been shown on the proposed development plans

• That a dwelling may be constructed on each lot in accordance with the requirements of this scheme. Lots of between 300 square metres and 500 square metres should: • Contain a building envelope that is consistent with a development of the lot approved under this scheme, or • If no development of the lot has been approved under this scheme, contain a building envelope and be able to contain a rectangle measuring 10 metres by 15 metres, or 9 metres by 15 metres if a boundary wall is nominated as part of the building envelope. If lots of between 300 square metres and 500 square metres are proposed to contain dwelling that are built to the boundary, long axis of the lots should be within 30 degrees east and 20 degrees west of north unless there are significant physical constraints that make it difficult to achieve. Lots greater than 500 square metres should be able to contain a rectangle measuring 10 metres by 15 metres, and may contain a building envelope. A building envelope may specify or incorporate any relevant siting and design requirement. Any requirement should meet the relevant standards of Clause 54, unless: • The objectives of the relevant standards are met, and • The building envelope is shown as a restriction on a plan of subdivision registered under the Subdivision Act 1988, or is specified as a covenant in an agreement under Section 173 of the Act. Where a lot with a building envelope adjoins a lot that is not on the same plan of subdivision or is not subject to the same agreement relating to the relevant building envelope: • The building envelope must meet Standards A10 and A11 of Clause 54 in relation to the adjoining lot, and • The building envelope must not regulate siting matters covered by Standards A12 to A15 (inclusive) of Clause 54 in relation to the adjoining lot. This should be specified in the relevant plan of subdivision or agreement. Lot dimensions and building envelopes should protect: • Solar access for future dwellings and support siting and design of dwellings that		

achieve the energy rating requirements of the Building Regulations. • Existing or proposed easements on lots. • Significant vegetation and site features.		
56.04-3 Solar orientation of lots objective To provide good solar orientation of lots and solar access for future dwellings.		
Standard C9	**Meets Standard?**	**Comment**
Unless the site is constrained by topography or other site conditions, at least 70 percent of lots should have appropriate solar orientation. Lots have appropriate solar orientation when: • The long axis of lots are within the range N20 degrees west to N30 degrees east, or E20 degrees north to E30 degrees south. • Lots between 300 square metres and 500 square metres are proposed to contain dwellings that are built to the boundary, the long axis of the lots should be within 30 degrees east and 20 degrees west of north. • Dimensions of lots are adequate to protect solar access to the lot, taking into account likely dwelling size and the relationship of each lot to the street.	Yes	The proposed subdivision responds to the topography of the land and achieves good solar orientation.
56.04-4 Street orientation objective To provide a lot layout that contributes to community social interaction, personal safety and proposed security.		
Standard C10	**Meets Standard?**	**Comment**
A subdivision should increase visibility and surveillance by: • Ensuring lots front all roads and streets and avoid the side or rear of lots being oriented to connector streets and arterial roads. • Providing lots of 300 square metres or less in area and lots for 2 or more dwellings around activity centres and public open space. • Ensuring streets and houses look onto public open space and avoiding side and rears of lots along public open space boundaries. • Providing roads and streets along public open space boundaries.	Yes	All lots will have direct access to Warringah Crescent.
56.04-5 Common area objective To identify common areas and the purpose for which the area is commonly held. To ensure the provision of common area is appropriate and that necessary management arrangements are in place. To maintain direct public access throughout the neighbourhood street network.		
Standard C11	**Meets Standard?**	**Comment**
An application to subdivide land that creates common land must be accompanied by a plan and report identifying: • The common area to be owned by the	N/A	There are no common areas within the proposed development.

body corporate. • The proposed arrangements including maintenance for streets and open spaces to be commonly held.		

56.05 Urban Landscape

56.05-1 Integrated urban landscape objective

To provide attractive and continuous landscaping in streets and public open spaces that contribute to the character and identity of new neighbourhoods and urban places or to existing or preferred neighbourhood character in existing urban areas.

To incorporate natural and cultural features in the design of streets and public open space where appropriate.

To protect and enhance native habitat and discourage the planting and spread of noxious weeds.

To provide for integrated water management systems and contribute to drinking water conservation.

Standard C12	**Meets Standard?**	**Comment**
An application to subdivide that creates streets or public open space should be accompanied by a landscape design. The landscape design should: • Implement any relevant streetscape, landscape, urban design or native vegetation precinct plan, strategy or policy for the area set out in this scheme. • Create attractive landscapes that visually emphasise streets and public open spaces. • Respond to the site and context description for the site and surrounding area. • Maintain significant vegetation where possible within an urban context. • Take account of physical features of the land including landform soil and climate. The landscape design must include a maintenance plan that sets out maintenance responsibilities, requirements and costs.	Yes	The proposed subdivision takes into account the existing features of the site and protects the majority of native vegetation. There is an opportunity for replanting to ensure the site reflects the semi-bush character of the area.

56.06 Access and Mobility Management

56.06-2 Walking and cycling objectives

To contribute to community health and well being by encouraging walking and cycling as part of the daily lives of residents, employees and visitors.

To provide safe and direct movement through and between neighbourhoods by pedestrians and cyclists.

To reduce car use, greenhouse gas emissions and air pollution.

Standard C15	**Meets Standard?**	**Comment**
The walking and cycling network should be designed to: • Implement any relevant regional and local walking and cycling strategy, plan or policy for the area set out in this scheme. • Link to any existing pedestrian and cycling networks. • Provide safe walkable distances to activity	Yes	The surrounding area is established and the subdivision will utilise the networks already established.

centres, community facilities, public transport stops and public open spaces. • Provide an interconnected and continuous network of safe, efficient and convenient footpaths, shared paths, cycle paths and cycle lanes based primarily on the network of arterial roads, neighbourhood streets and regional public open spaces. • Provide direct cycling routes for regional journeys to major activity centres, community facilities, public transport and other regional activities and for regional recreational cycling. • Ensure safe street and road crossings including the provision of traffic controls where required. • Provide an appropriate level of priority for pedestrians and cyclists. • Have natural surveillance along streets and from abutting dwellings and be designed for personal safety and security particularly at night. • Be accessible to people with disabilities.		
56.06-4 Neighbourhood street network objective To provide for direct, safe and easy movement through and between neighbourhoods for pedestrians, cyclists, public transport and other motor vehicles using the neighbourhood street network.		
Standard C17	**Meets Standard?**	**Comment**
The neighbourhood street network must: • Take account of the existing mobility network of arterial roads, neighbourhood streets, cycle paths, cycle paths, footpaths and public transport routes. • Provide clear physical distinctions between arterial roads and neighbourhood street types. • Comply with the Roads Corporation's arterial road access management policies. • Provide an appropriate speed environment and movement priority for the safe and easy movement of pedestrians and cyclists and for accessing public transport. • Provide safe and efficient access to activity centres for commercial and freight vehicles. • Provide safe and efficient access to all lots for service and emergency vehicles. • Provide safe movement for all vehicles. • Incorporate any necessary traffic control measures and traffic management infrastructure. The neighbourhood street network should be designed to: • Implement any relevant transport strategy, plan or policy for the area set out in this scheme. • Include arterial roads at intervals of	Yes	The surrounding area is established and the subdivision will utilise the networks already established.

approximately 1.6 kilometres that have adequate reservation widths to accommodate long term movement demand. • Include connector streets approximately halfway between arterial roads and provide adequate reservation widths to accommodate long term movement demand. • Ensure connector streets align between neighbourhoods for direct and efficient movement of pedestrians, cyclists, public transport and other motor vehicles. • Provide an interconnected and continuous network of streets within and between neighbourhoods for use by pedestrians, cyclists, public transport and other vehicles. • Provide an appropriate level of local traffic dispersal. • Indicate the appropriate street type. • Provide a speed environment that is appropriate to the street type. • Provide a street environment that appropriately manages movement demand (volume, type and mix of pedestrians, cyclists, public transport and other motor vehicles). • Encourage appropriate and safe pedestrian, cyclist and driver behaviour. • Provide safe sharing of access lanes and access places by pedestrians, cyclists and vehicles. • Minimise the provision of culs-de-sac. • Provide for service and emergency vehicles to safely turn at the end of a dead-end street. • Facilitate solar orientation of lots. • Facilitate the provision of the walking and cycling network, integrated water management systems, utilities and planting of trees. • Contribute to the area's character and identity. • Take account of any identified significant features.		
56.06-5 Walking and cycling network detail objectives To design and construct footpaths, shared path and cycle path networks that are safe, comfortable, well constructed and accessible for people with disabilities. To design footpaths to accommodate wheelchairs, prams, scooters and other footpath bound vehicles.		
Standard C18	**Meets Standard?**	**Comment**
Footpaths, shared paths, cycle paths and cycle lanes should be designed to: • Be part of a comprehensive design of the road or street reservation. • Be continuous and connect. • Provide for public transport stops, street	Yes	The surrounding area is established and the subdivision will utilise the networks already established.

crossings for pedestrians and cyclists and kerb crossovers for access to lots. • Accommodate projected user volumes and mix. • Meet the requirements of Table C1. • Provide pavement edge, kerb, channel and crossover details that support safe travel for pedestrians, footpath bound vehicles and cyclists, perform required drainage functions and are structurally sound. • Provide appropriate signage. • Be constructed to allow access to lots without damage to the footpath or shared path surfaces. • Be constructed with a durable, non-skid surface. • Be of a quality and durability to ensure: o Safe passage for pedestrians, cyclists, footpath bound vehicles and vehicles. o Discharge of urban run-off. o Preservation of all-weather access. o Maintenance of a reasonable, comfortable riding quality. o A minimum 20 year life span. • Be accessible to people with disabilities and include tactile ground surface indicators, audible signals and kerb ramps required for the movement of people with disabilities.		
56.06-7 Neighbourhood street network detail objective To design and construct street carriageways and verges so that the street geometry and traffic speeds provide an accessible and safe neighbourhood street system for all users.		
Standard C20	**Meets Standard?**	**Comment**
The design of streets and roads should: • Meet the requirements of Table C1. Where the widths of access lanes, access places, and access streets do not comply with the requirements of Table C1, the requirements of the relevant fire authority and roads authority must be met. • Provide street blocks that are generally between 120 metres and 240 metres in length and generally between 60 metres to 120 metres in width to facilitate pedestrian movement and control traffic speed. • Have verges of sufficient width to accommodate footpaths, shared paths, cycle paths, integrated water management, street tree planting, lighting and utility needs. • Have street geometry appropriate to the street type and function, the physical land characteristics and achieve a safe environment for all users. • Provide a low-speed environment while	N/A	No new street carriageways are proposed to be constructed.

allowing all road users to proceed without unreasonable inconvenience or delay.
• Provide a safe environment for all street users applying speed control measures where appropriate.
• Ensure intersection layouts clearly indicate the travel path and priority of movement for pedestrians, cyclists and vehicles.
• Provide a minimum 5 metre by 5 metre corner splay at junctions with arterial roads and a minimum 3 metre by 3 metre corner splay at other junctions unless site conditions justify a variation to achieve safe sight lines across corners.
• Ensure streets are of sufficient strength to:
  o Enable the carriage of vehicles.
  o Avoid damage by construction vehicles and equipment.
• Ensure street pavements are of sufficient quality and durability for the:
  o Safe passage of pedestrians, cyclists and vehicles.
  o Discharge of urban run-off.
  o Preservation of all-weather access and maintenance of a reasonable, comfortable riding quality.
• Ensure carriageways of planned arterial roads are designed to the requirements of the relevant road authority.
• Ensure carriageways of neighbourhood streets are designed for a minimum 20 year life span.
• Provide pavement edges, kerbs, channel and crossover details designed to:
  o Perform the required integrated water management functions.
  o Delineate the edge of the carriageway for all street users.
  o Provide efficient and comfortable access to abutting lots at appropriate locations.
  o Contribute to streetscape design.
• Provide for the safe and efficient collection of waste and recycling materials from lots.
• Be accessible to people with disabilities.
 	
A street detail plan should be prepared that shows, as appropriate:
• The street hierarchy and typical cross-sections for all street types.
• Location of carriageway pavement, parking, bus stops, kerbs, crossovers, footpaths, tactile surface indicators, cycle paths and speed control and traffic management devices.
• Water sensitive urban design features.		

• Location and species of proposed street trees and other vegetation. • Location of existing vegetation to be retained and proposed treatment to ensure its health. • Any relevant details for the design and location of street furniture, lighting, seats, bus stops, telephone boxes and mailboxes.		
56.06-8 Lot access objective To provide for safe vehicle access between roads and lots.		
Standard C21	**Meets Standard?**	**Comment**
Vehicle access to lots abutting arterial roads should be provided from service roads, side or rear access lanes, access places or access streets where appropriate and in accordance with the access management requirements of the relevant roads authority. Vehicle access to lots of 300 square metres or less in area and lots with a frontage of 7.5 metres or less should be provided via rear or side access lanes, places or streets. The design and construction of a crossover should meet the requirements of the relevant road authority.	Yes	The subdivision proposes an additional crossover, the design will be to the satisfaction of Council.

56.07 Integrated Water Management

56.07-1 Drinking water supply objectives To reduce the use of drinking water. To provide an adequate, cost-effective supply of drinking water.		
Standard C22	**Meets Standard?**	**Comment**
The supply of drinking water must be: • Designed and constructed in accordance with the requirements and to the satisfaction of the relevant water authority. • Provided to the boundary of all lots in the subdivision to the satisfaction of the relevant water authority.	Yes	Drinking water supply will be provided in accordance with all relevant requirements and to the satisfaction of the water authority and Council.
56.07-2 Reused and recycled water objectives To provide for the substitution of drinking water for non-drinking purposes with reused and recycled water.		
Standard C23	**Meets Standard?**	**Comment**
Reused and recycled water supply systems must be: • Designed, constructed and managed in accordance with the requirements and to the satisfaction of the relevant water authority, Environment Protection Authority and Department of Human Services. • Provided to the boundary of all lots in the subdivision where required by the relevant water authority.	N/A	Given the scale of the proposal it is not appropriate to incorporate recycled water in the design.

56.07-3 Waste water management objective To provide a waste water system that is adequate for the maintenance of public health and the management of effluent in an environmentally friendly manner.		
Standard C24	**Meets Standard?**	**Comment**
Waste water systems must be: • Designed, constructed and managed in accordance with the requirements and to the satisfaction of the relevant water authority and the Environment Protection Authority. • Consistent with any relevant approved domestic waste water management plan. Reticulated waste water systems must be provided to the boundary of all lots in the subdivision where required by the relevant water authority.	Yes	All waste water systems will be constructed in accordance with all relevant requirements and to the satisfaction of Council.
56.07-4 Urban run-off management objectives To minimise damage to properties and inconvenience to residents from urban run-off. To ensure that the street operates adequately during major storm events and provides for public safety. To minimise increases in stormwater run-off and protect the environmental values and physical characteristics of receiving waters from degradation by urban run-off.		
Standard C25	**Meets Standard?**	**Comment**
The urban stormwater management system must be: • Designed and managed in accordance with the requirements and to the satisfaction of the relevant drainage authority. • Designed and managed in accordance with the requirements and to the satisfaction of the water authority where reuse of urban run-off is proposed. • Designed to meet the current best practice performance objectives for stormwater quality as contained in the Urban Stormwater – Best Practice Environmental Management Guidelines (Victorian Stormwater Committee 1999) as amended. • Designed to ensure that flows downstream of the subdivision site are restricted to predevelopment levels unless increased flows are approved by the relevant drainage authority and there are no detrimental downstream impacts. The stormwater management system should be integrated with the overall development plan including the street and public open space networks and landscape design. For all storm events up to and including the 20% Average Exceedence Probability (AEP) standard: • Stormwater flows should be contained within the drainage system to the	Yes Yes	All stormwater drainage systems will be constructed in accordance with all relevant requirements and to the satisfaction of Council.

requirements of the relevant authority. • Ponding on roads should not occur for longer than 1 hour after the cessation of rainfall. For storm events greater than 20% AEP and up to and including 1% AEP standard: • Provision must be made for the safe and effective passage of stormwater flows. • All new lots should be free from inundation or to a lesser standard of flood protection where agreed by the relevant floodplain management authority. • Ensure that streets, footpaths and cycle paths that are subject to flooding meet the safety criteria da Vave < 0.35 m2/s (where, da = average depth in metres and Vave = average velocity in metres per second). The design of the local drainage network should: • Ensure run-off is retarded to a standard required by the responsible drainage authority. • Ensure every lot is provided with drainage to a standard acceptable to the relevant drainage authority. Wherever possible, run-off should be directed to the front of the lot and discharged into the street drainage system or legal point of discharge. • Ensure that inlet and outlet structures take into account the effects of obstructions and debris build up. Any surcharge drainage pit should discharge into an overland flow in a safe and predetermined manner. • Include water sensitive urban design features to manage run-off in streets and public open space. Where such features are provided, an application must describe maintenance responsibilities, requirements and costs. Any flood mitigation works must be designed and constructed in accordance with the requirements of the relevant floodplain management authority.	Yes Yes	

56.08 Site Management

56.08-1 Site management objectives To protect drainage infrastructure and receiving waters from sedimentation and contamination. To protect the site and surrounding area from environmental degradation or nuisance prior to and during construction of subdivision works. To encourage the re-use of materials from the site and recycled materials in the construction of subdivisions

where practicable.		
Standard C26	**Meets Standard?**	**Comment**
A subdivision application must describe how the site will be managed prior to and during the construction period and may set out requirements for managing: • Erosion and sediment. • Dust. • Run-off. • Litter, concrete and other construction wastes. • Chemical contamination. • Vegetation and natural features planned for retention. Recycled material should be used for the construction of streets, shared paths and other infrastructure where practicable.	Yes	All required documentation will be prepared and submitted to Council for approval prior to any construction on site.

56.09 Utilities

56.09-1 Shared trenching objectives To maximise the opportunities for shared trenching. To minimise constraints on landscaping within street reserves.		
Standard C27	**Meets Standard?**	**Comment**
Reticulated services for water, gas, electricity and telecommunications should be provided in shared trenching to minimise construction costs and land allocation for underground services.	Yes	Trench sharing will be provided where practical.
56.09-2 Electricity, telecommunications and gas objectives To provide public utilities to each lot in a timely, efficient and cost effective manner. To reduce greenhouse gas emissions by supporting generation and use of electricity from renewable sources.		
Standard C28	**Meets Standard?**	**Comment**
The electricity supply system must be designed in accordance with the requirements of the relevant electricity supply agency and be provided to the boundary of all lots in the subdivision to the satisfaction of the relevant electricity authority. Arrangements that support the generation or use of renewable energy at a lot or neighbourhood level are encouraged. The telecommunication system must be designed in accordance with the requirements of the relevant telecommunications servicing agency and should be consistent with any approved strategy, policy or plan for the provision of advanced telecommunications infrastructure, including fibre optic technology. The telecommunications system must be provided to the boundary of all lots in the subdivision to the satisfaction of the relevant telecommunications servicing authority.	Yes	New service connections for electricity, telecommunications and gas and will be constructed in accordance with all relevant requirements and to the satisfaction of relevant authorities.

Where available, the reticulated gas supply system must be designed in accordance with the requirements of the relevant gas supply agency and be provided to the boundary of all lots in the subdivision to the satisfaction of the relevant gas supply agency.		
56.09-3 Fire hydrants objective To provide fire hydrants and fire plugs in positions that enable fire fighters to access water safely, effectively and efficiently.		
Standard C29	**Meets Standard?**	**Comment**
Fire hydrants should be provided: • A maximum distance of 120 metres from the rear of the each lot. • No more than 200 metres apart. • Hydrants and fire plugs must be compatible with the relevant fire service equipment.	N/A	Given the scale of the proposal it is not appropriate to incorporate new fire hydrants in the design.
56.09-4 Public lighting objective To provide public lighting to ensure the safety of pedestrians, cyclists and vehicles. To provide pedestrians with a sense of personal safety at night. To contribute to reducing greenhouse gas emissions and to saving energy.		
Standard C30	**Meets Standard?**	**Comment**
Public lighting should be provided to streets, footpaths, public telephones, public transport stops and to major pedestrian and cycle paths including public open spaces that are likely to be well used at night to assist in providing safe passage for pedestrians, cyclists and vehicles. Public lighting should be designed in accordance with the relevant Australian Standards. Public lighting should be consistent with any strategy, policy or plan for the use of renewable energy and energy efficient fittings.	N/A	Given the scale of the proposal it is not appropriate to incorporate public lighting in the design.

PRACTICAL ECOLOGY
ecological restoration & consulting

This document consists of 102 pages

DRAFT

Flora and Fauna Assessment and Native Vegetation Impact Assessment

26 Warringah Crescent, Eltham

March 2020

DRAFT

Flora and Fauna Assessment and Native Vegetation Impact Assessment for 26 Warringah Crescent, Eltham

March 2020

Report by Noemie Seck.
Fieldwork by Noemie Seck and Michelle Savona.
Mapping by Emma Loboda and Karen McGregor.

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Version	Date	Author	Reviewer:	Version notes
0.0	16 March 2020	Noemie Seck	Michelle Savona	Pre-draft internal review
0.01	24 March 2020	Noemie Seck	Michelle Savona	Pre-draft internal review
0.02	25 March 2020	Noemie Seck	Michelle Savona	Pre-draft internal review
0.1	26 March 2020	Noemie Seck	Michelle Savona	Draft for client review
1.0	TBC	Noemie Seck	TBC	Final for submission

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1. INTRODUCTION

Practical Ecology Pty Ltd was commissioned by Mark Lendon to prepare a Flora and Fauna and Native Vegetation Impact Assessment for 26 Warringah Crescent, Eltham.

This report was sought in support of a planning permit application to Nillumbik Shire Council to subdivide the site into three lots that will facilitate the future development of two additional dwellings.

1.1 Scope

The scope of works to be completed as part of this project included:

- a review the relevant flora and fauna databases and available literature
- a description of the existing site conditions
- categorisation of vegetation according to *Guidelines for the removal, destruction and lopping of native vegetation* (DELWP 2017a) as either native vegetation patches; Scattered Trees; or non-native vegetation
- a description of the existing and/or original Ecological Vegetation Classes found within the site and assessment based on the Habitat Hectares scoring method
- a review of tree data collected by Stem Arboricultural Consultancy in relation to remnant patch large trees and Scattered Trees (if present) which will be potentially impacted, based on *Australian Standard AS 4970-2009 - Protection of trees on development sites*
- the compilation of a list of vascular plants observed across the Study Site
- the compilation of a list of vertebrate fauna observed across the Study Site
- consideration of the potential for the occurrence of significant flora and fauna
- discussion of relevant ecological policy and legislation in relation to the proposed development
- determination of the extent of vegetation removal that may be required for the development proposal
- a Native Vegetation Impact and Offset Requirements assessment due to the development proposal
- a statement outlined how the development design has avoided and minimised loss of native vegetation
- mapping to illustrate necessary information, including existing conditions.

1.2 Study Site

1.2.1 Site description

The Study Site, at 26 Warringah Crescent, Eltham, is bound by Warringah Crescent on its northern side and is accessible from an existing driveway from Warringah Crescent. The northern section of the property is located at the top of a hill where an existing dwelling and associated features including a carport, garden area and sheds occur. Private property abuts all other adjacent boundaries to the site, all of which have existing dwellings also.

The site is approximately 0.42 ha. Indigenous vegetation occurs on the entire site including numerous remnant native trees present across the property; below these native grasses occur in most areas without existing infrastructure. There are no waterbodies, such as creeks or dams, within the property.

1.2.2 Adjacent land

The site is in the vicinity of the Nerreman Reserve, located at its south-west. A small creek named Karingal Yalloc crosses this reserve as well as many other parks and reserves surrounding the property such as Ramptons Road Reserve and Meruka Park. These are located at the north-west and south of the Study Site respectively.

The vegetation on site forms part of a generously wooded local landscape and contributes to the connection between two important ecological corridors in the area, these being Karingal Yalloc and Diamond Creek watercourses. These are located to the west and east of the site respectively.

1.2.3 Landscape

Bioregions are a landscape-scale approach to classifying the environment using a range of attributes such as climate, geomorphology, geology, soils and vegetation. There are 28 bioregions identified within Victoria, the study area falls within the Highlands – Southern Falls Bioregion (DELWP 2018a).

Under the Catchment and Land Protection Act 1994 (the CaLP Act), Victoria is divided into ten catchment regions with a Catchment Management Authorities (CMA) established for each region (Victorian Water Industry Association Inc 2015). The Study Site occurs within the Port Philip and Westernport Catchment (DELWP 2018a)

The surrounding landscape is hilly and contains numerous patches and corridors of native vegetation, mostly in the nearby parks, and along the creeks.

1.2.4 Land-use history

The site is currently used as private property and includes a dwelling and its relative driveway in its half north. The rest of the property is used as a private garden, and some non-native tree species have been planted around the house.

1.2.5 Zoning and Overlays

The site is zoned Neighbourhood Residential Zone – Schedule 1 (NRZ1) and is covered by the following Overlays:

- Environmental Significance Overlay – Schedule 1 (ESO1)
- Significant Landscape Overlay – Schedule 2 (SLO2)

The site is also in an area of Aboriginal Cultural Heritage Sensitivity and in a designated Bushfire Prone Area (special bushfire construction requirements apply).

2. METHODS

2.1 Field survey

Field survey was undertaken by Michelle Savona and Noémie Seck on 27th February 2020, involving:

- mapping and assessing vegetation in line with the requirements of the *Guidelines for the removal, destruction and lopping of native vegetation* (DELWP 2017a)
- mapping and reviewing data from Stem Arboricultural Consultancy for trees across the site, particularly those meeting the definition of a Large Tree in DELWP (2017a)
- the compilation of a list of vascular plants observed across the Study Site
- consideration of the site's habitat values for threatened fauna and flora.

2.2 Vegetation Categorisation, Classification and Quality

Vegetation was assessed for its categorisation according to the *Guidelines for the removal, destruction and lopping of native vegetation* (DELWP 2017a), then it's Ecological Vegetation Class and finally, quality, as determined by a Habitat Hectare assessment.

2.2.1 Vegetation Categories

Vegetation in the study area was categorised in accordance with the *Guidelines for the removal, destruction and lopping of native vegetation* (DELWP 2017a) which defines native vegetation as :

- **Native Vegetation**

  Native Vegetation as per the Victorian Planning Provisions (Clause 72): plants that are indigenous to Victoria, including trees shrubs, herbs and grasses.

- **Native Vegetation Patch**

  A patch of native vegetation is either:

  - an area of vegetation where at least 25 per cent of the total perennial understorey plant cover is native
  - any area with three or more native canopy trees where the drip line of each tree touches the drip line of at least one other tree, forming a continuous canopy, or
  - any mapped wetland included in the current wetlands layer available in the Department of Environment, Land, Water and Planning's (DELWP) Native Vegetation Information Management tool and other DELWP systems.

- **Native canopy tree**

  A *native canopy tree* is a mature tree (i.e. that is able to flower) that is greater than 3m in height and is normally found in the upper layer of the relevant vegetation type.

- **Large Tree**

  A *Large Tree* is either: a live tree that is equal to or greater than the large tree benchmark for the species in the relevant EVC; or a standing dead tree has a trunk diameter of 40 centimetres or greater

- **Scattered Tree:**

  A *Scattered Tree* is a native canopy tree that does not form part of a patch.

  Scattered Trees are measured by diameter at breast height (DBH) at 1.3 metres above ground level. Scattered Trees have 2 size classes, Large Trees and Small Trees, i.e. those that have a DBH that is less than the large tree benchmark for the species in the relevant EVC.

2.2.2 Ecological Vegetation Classes

Ecological Vegetation Classes (EVCs) are a method of systematic organisation of plant communities into common types that occur in similar environmental conditions throughout Victoria. Each vegetation type is identified on the basis of its floristic composition (the plant species present), vegetation structure (woodland, grassland, saltmarsh), landform (gully, foothill, plain) and environmental characteristics (soil type, climate).

Modelled EVC distribution was accessed to assess the EVC likely to occur on the study area (DELWP 2018a). EVCs were then identified in the field according to observable attributes including dominant and characteristic species consistent with the benchmark descriptions (DELWP 2018b).

2.2.3 Habitat Hectare Assessment

A habitat hectare assessment applies to a defined native vegetation patch and is used to determine the condition of the vegetation and significance of native vegetation. This methodology is outlined in *Vegetation Quality Assessment Manual–Guidelines for Applying the Habitat Hectares Scoring Method* (DSE 2004a). The habitat hectare method involves making visual and quantitative assessments on various characteristics of native vegetation according to established criteria that are set against an optimum benchmark.

This process begins with the identification of the EVC. Each EVC has an optimal benchmark representing its mature, natural (pre–1750) state. The assessment area is measured based on 7 habitat/vegetation components and 3 landscape components as a percentage of the EVC benchmark.

Assessment areas are separated into different habitat zones where two types of EVCs are observed or where there are observed differences in condition within a single EVC that are above a particular threshold.

When undertaking a habitat hectare assessment, Large Trees within a patch are also documented. The size of a Large Tree is stated in the benchmark for the EVC present on site.

2.3 Tree survey

When undertaking fieldwork, reference was made to data collected by Stem Arboricultural Consultancy. The location and details of trees across the Study Site, such as DBH and species, particularly as it related to Large Old Trees was used as part of this report. A cross–check of DBH measurements within the arborist report for trees 70cm of over was made on site to ensure that measurements were in line with the requirements of DELWP (2017a) and DSE (2004a).

The location, species and DBH for each Large Tree within the site is discussed in Section 3.1.5 and illustrated on Map 2. For further detail on other trees across the Study Site, refer to the Arboricultural Assessment and Report from Stem Arboricultural Consulting (2019).

Tree Protection Zones were also considered for the purpose of this assessment. A Tree Protection Zone (TPZ) is an area around the trunk of a tree which has a radius of 12 times the DBH. A TPZ is a maximum of 15 metres but no less than 2 metres. Dead trees greater than 40 cm DBH should be protected with a radius of 15 metres from the base to be considered retained (DELWP 2017b).

2.4 Taxonomy

Flora and fauna taxonomy used in this report is in accordance with the Victorian Biodiversity Atlas Checklist dated 14/02/2020 (DELWP 2020).

2.5 Flora

2.5.1 Existing information

Existing flora records on the Victorian Biodiversity Atlas (DELWP 2018c) for a 5 kilometre radius around the study area was obtained on 24/02/2020.

2.5.2 Flora survey

During the assessment, the study area was inspected on foot. A species list (or defined area list) for indigenous or naturalised flora (i.e. not including planted species) over the entire Study Site was compiled.

2.5.3 Identification

Species that could not be identified in the field were recorded to the nearest possible family or genera. These were then collected as per the protocols associated with Practical Ecology's Flora and Fauna Guarantee (FFG) Act 1988 permit (No. 10008906) for the collection of plant material. In order to assist in the identification of some flora, major features of the specimens were collected where possible, including leaves, parts of branches, fruit and/or flowers.

2.5.4 Limitations of flora survey

The following considerations should be made regarding the limitations of the flora survey:

- it was undertaken in late summer/early autumn which is not the optimal time for plant identification
- it is expected that some other species, particularly orchid, lily and other herbaceous species that can only be observed for a limited period of time may not have been recorded during the present assessment

- flora surveys were undertaken over a short period of time and focussed on areas of the site most impacted upon by the proposed development.

Nonetheless the survey was considered an adequate representation of site condition and sufficient to determine potential impacts associated with the development and guide land management across the site.

2.6 Fauna

2.6.1 Existing information

Existing fauna records on the Victorian Biodiversity Atlas (DELWP 2018d) for a 5 kilometre radius around the study area was obtained on 24/02/2020.

2.6.2 Fauna and fauna habitat survey

Only a brief incidental fauna survey was undertaken for this study. As it was undertaken in association with other tasks some species onsite are likely to have not been observed. The main focus in regard to fauna was to undertake a habitat assessment. The habitat assessment relies upon making judgements on the suitability of habitat present within the Study Site for any significant species recorded in the database search.

2.7 Potentially occurring rare or threatened species

Database information was used to determine likelihood of occurrence of rare or threatened species that occur or are predicted to occur within five kilometres of the study area. In determining likelihood of occurrence and potential use of the study area by national or state significant flora and fauna, the following factors were considered:

- previous recordings of species in the local area
- date of last record
- the habitat requirements of individual species
- the physical attributes of the site, such as topography, geology, soils, aspect and other habitat features such as trees with hollows, the presence of rocks or boulders, logs on the ground
- the history of land use at the Study Site
- the ecological landscape context; i.e. the degree of connectivity, modification and fragmentation across the landscape.

A basic matrix that describes the justification for the likelihood of occurrence is presented below.

Table 1. Criteria for potential occurrence of significant species

Likelihood of occurrence	Criteria
Nil	Species known to be extinct in local area and/or absent from the site.
Low	Unsuitable habitat at Study Site; or habitat conditions intermediate and records very limited and dated; or if it were present, it is highly likely to have been observed on site.
Medium	Habitat conditions are intermediate, and/or optimal habitat conditions for species but local records limited or dated and/or if it were present, it is not likely to have been observed on site.
High	Optimal habitat conditions for species or species recorded at site, or intermediate habitat conditions but extensive local records and/or if it were present, it is not likely to have been observed on site.

2.8 Mapping

Spatial data collection was carried out using a combination of a handheld GPS enabled device and aerial photography. Determination of vegetation boundaries was undertaken using a combination of GPS data and ground-truthing with aerial photography. GPS data and mapping should be considered approximate only (e.g. +/- 1-5m).

3. RESULTS

3.1 Vegetation Categorisation, Classification and Quality

The majority of the Study Site has native vegetation present that meets the definition of a patch as defined by DELWP (2017a). A thorough check of the conditions across the site was undertaken as part of this determination, which was based on the presence of either 25% perennial understorey plant cover that was native, or three or more native canopy trees present where the drip line of each tree touched the drip line of at least one other tree, forming a continuous canopy. Based on these definitions, Habitat Zone 1 was identified, with its distribution presented on Map 2. The Ecological Vegetation Class on site and its bioregional conservation status are shown in Table 2.

Table 2. Bioregional Conservation Status for Extant EVCs at Study Site.

EVC No.	EVC	Bioregional Conservation Status
47	Valley Grassy Forest	Vulnerable

3.1.1 Valley Grassy Forest

Habitat Zone 1 (Figure 1, Figure 2, Figure 3 and Figure 4) occurs across the majority of the property and adjacent roadside except for a defined zone around the existing dwelling and driveway. This Habitat Zone contains a Valley Grassy Forest vegetation that has been subject to ongoing mowing of the ground layer across most areas. While there are a number of large trees, this is an absence of native tree recruitment as a result of this regular mowing regime on the property.

The canopy on site is dominated by Yellow Box *Eucalyptus melliodora*, Candlebark *Eucalyptus rubida*, Long Leaved Box *Eucalyptus goniocalyx* and Red Stringybark *Eucalyptus macrorhyncha.*

The understorey includes both indigenous and exotic (planted) shrubs species. The native shrub species, which have a scattered occurrence across the Habitat Zone identified, included Cherry Ballart Exocarpos cupressiformis, Blackwood *Acacia melanoxylon*, Bottle Brush *Callistemon spp.*, and Burgan *Kunzea ericoides s. l.* Some Exotic species occurred in this storey, including Tree Tobacco **Nicotiana glauca* and Hawthorn **Crataegus monogyna*.

The groundstorey includes exotic grasses including Cocksfoot **Dactylis glomerata*, Panic Veldt-grass **Ehrharta erecta*, Annual Veldt-grass **Ehrharta longiflora* and Ribwort **Plantago lanceolata*. While this is the case, at least 25% of the groundstorey cover across most of the Habitat Zone is attributable to native perennial species. These species include Weeping Grass *Microlaena stipoides var.,* Kidney-weed *Dichondra repens*, and Slender Wallaby-grass *Rytidosperma racemosum var. racemosum.*

Figure 1. Valley Grassy Forest present in south-west of the property

Figure 2. Valley Grassy Forest present in south-east of the property

Figure 3. Valley Grassy Forest present in north-west of the property

Figure 4. Valley Grassy Forest present in north-east of the property

3.1.2 Habitat hectare assessment

Table 3 below presents the results of the habitat hectare assessment completed for Habitat Zone 1.

Table 3. Habitat hectare assessment

Habitat Zone			**1**
Bioregion			HSF
EVC Name (initials)			VGF
EVC Number			47
EVC Conservation Status			Vulnerable
Size of Zone (ha)			0.370
		Max Score	**Score**
Site Condition	Large Old Trees	10	3
	Canopy Cover	5	4
	Understorey	25	10
	Lack of Weeds	15	6
	Recruitment	10	0
	Organic Litter	5	5
	Logs	5	4
	EVC Standardiser	n/a	1
	Standardised Score	75	32
Landscape value	Patch Size	10	4
	Neighbourhood	10	
	Distance to Core	5	
Habitat points		100	36
Habitat Score (habitat points/100)		**0.##**	**0.36**
No. of Large Old Trees			**3**

3.1.3 Large Trees

There are three Large Trees present within Habitat Zone 1 (Map 2).

Table 4 describes the species and size of these trees with this data taken from Stem Arboricultural Consulting as discussed in Section 2.3 above.

The DBH for a Large Tree for Valley Grassy Forest within the Highlands Southern Fall Bioregion is 70cm.

Table 4. Scattered Trees and Large trees in Habitat Zones on site

Tree ID	Scientific name	Common name	DBH (cm)	TPZ (m)	Large tree	Comments
Large Tree in Habitat Zone						
1	*Eucalyptus rubida*	Candlebark	70	8.4	Yes	Decaying trunk. Cavities.
2	*Eucalyptus rubida*	Candlebark	75	15	Yes	Dead tree with large hollows
3	*Eucalyptus melliodora*	Yellow Box	70	8.4	Yes	Large canopy

3.2 Flora

A total of 49 plant taxa were recorded in the study area during this survey of which 19 were indigenous (38.8%) and 30 (61.2%) were introduced or naturalised outside their natural range.

Appendix 1 lists all flora recorded within the Study Site. Table 5 summarises plant taxa recorded in the study area during this survey.

Table 5. Summary of plant species recorded

Flora Status	Number of Taxa
Indigenous vascular species	19
Exotic species	29
Native species outside of natural range	1
TOTAL	**49**

3.2.1 Rare or threatened flora

No rare or threatened species of state or national significance were recorded on-site.

A search for state or nationally significant flora species recorded within 5 km of the site area in the VBA revealed 41 species, one of which have a 'Medium' likelihood of occurring on site: Velvet Apple-berry *Billardiera scandens s.s.* This species is common in well-drained, dry to moist soils, particularly heathland, woodland and forests from near-sea level to sub-alpine regions (Walsh, 1996). The surrounding area where remnant bushland occurs is likely to support this species. However, the Study Site is quite modified and has been subject to ongoing mowing reducing its potential to occur on site. Furthermore, this species was not observed on site.

Six rare of threatened species are considered to have a 'Low-Medium' likelihood of using the habitat on-site: Clover Glycine *Glycine latrobeana,* Slender Tick-trefoil *Desmodium varians*, Veined Spear-grass *Austrostipa rudis subsp. Australis*, Matted Flax-lily *Dianella amoena*, Rosemary Grevillea *Grevillea rosmarinifolia*, and Yarra Burgan *Kunzea leptospermoides*.

While there are records for these species in the local area, modification of the understorey through ongoing moving along with weed invasion reduces the potential for them to occur within the Study Site.

Further details of these species are given in Appendix 2.

3.3 Fauna

3.3.1 Fauna survey

The results of the incidental fauna survey are presented in Table 6.

Table 6. Incidental fauna list recorded during site visit

Common name	Record type
Australian Magpie	Observed
Raven	Observed
Eastern Rosella	Observed
Noisy Miner	Observed
Gang-gang Cockatoo	Observed
Laughing Kookaburra	Heard

3.3.2 Fauna habitat

The main focus with regards to fauna during the assessment was the consideration of the site's potential to provide fauna habitat. The habitat observed within the site included:

- leaf litter
- riparian habitat
- tree canopies, and trees with hollows
- dense understorey vegetation
- grassy understorey vegetation

The vegetation on site is connecting two important habitat corridors in the landscape, which are Karingal Yalloc corridor to the west, and Diamond Creek corridor to the east. This vegetation provides very good fauna habitat and offers plenty of various sized hollows, which are suitable nesting habitat for many birds, and abundance of fibrous bark, which is an excellent nesting material for some arboreal mammals such as Brush-tailed Phascogale. The areas with leaf litter also provide habitat for smaller fauna species such as lizards and invertebrates.

3.3.3 Rare or threatened fauna

No rare or threatened fauna of state or national significance were recorded during the site inspection.

A total of 49 state or nationally significant fauna species are recorded within a 5-kilometre radius of the study area in the VBA. Some of these species have a medium or higher the potential to utilise the habitat available within the Study Site. Further detail in relation to these selected species is provided below; more information is provided in Appendix 3.

3.3.3.1 High Likelihood of Occurrence

Two of these species are considered to have a 'High' likelihood of using the habitat on-site: Swift Parrot *Lathamus discolour* and Powerful Owl *Ninox strenua.*

Swift Parrot

- There are 83 recent records for Swift Parrot within five-kilometres of the Study Site on the VBA, with the most recent record from 2019. This species migrates from breeding grounds in Tasmania to the Australian mainland in winter. Its preferred over-winter habitat is woodlands and riparian vegetation, where there are winter flowering eucalypts.

- According to Kennedy and Tzaros (2005), in Victoria, 90% of Swift Parrot foraging occurs in Ironbark *Eucalyptus tricarpa*, Red Ironbark *Eucalyptus sideroxylon*, Yellow Gum *Eucalyptus leucoxylon* and Grey Box *Eucalyptus microcarpa* According to the Arboricultural Assessment and Report from Stem Arboricultural Consulting (2019), these eucalypt species are not present on site. While this is the case, Yellow Box is listed as a key foraging tree species for Swift Parrot within Victoria in the Port Phillip and Westernport Catchment Management Authority region in the National Recovery Plan for the Swift Parrot (Saunders and Tzaros (2011).

- Stem Arboricultural Consulting (2019) recorded 15 Yellow Box trees within the Study Site. This includes trees of a range of sizes and maturity, and included the following Trees: 3, 20, 21, 22, 24, 27, 34, 46, 49, 51, 54, 58, 59, 61 and 66.

- Swift Parrots have been found to preferentially forage in large, mature trees that provide more reliable foraging resources than younger trees (Birds Australia 2011); within the Study Site, there are five larger, mature Yellow Box trees on site. These are Trees 3 (60 cm DBH), Tree 20 (49cm DBH); Tree 24 (57cm DBH), Tree 34 (53cm DBH) and Tree 51 (72cm DBH).

- It is also noted that Saunders and Tzaros (2011) suggests that prolonged use of disturbed habitats is energetically expensive due to the presence of aggressive urban species, reduced food quality and increased exposure to collision hazards in the built environment. This can reduce the potential for the species to occur in more urban areas.

- Given the presence of records for Swift Parrot in the local area however and the availability of foraging habitat in the form of Yellow Box trees on site, the likelihood of occurrence for Swift Parrot within the Study Area is considered high.

- Given the location of the Study Site however in Eltham and its urban nature, it is likely that Swift Parrot would only occasionally use the foraging resources available on site when going to and from other habitat in Tasmania for breeding, and in northern Victoria for prolonged overwinter foraging. This includes areas such as Bendigo Regional Park, Dookie Bushland Reserve, Muckleford Historic and Cultural Reserve, Paddy's Ranges State Park and Warby Ranges State Park which are listed as priority habitat areas for foraging for the species in Birds Australia (2011). It is unlikely to spend a significant period of time within the Study Site should it occur there and forage on the resources that are present.

Powerful Owl

- There are multiple recent records for Powerful Owl within five kilometres of the Study Site on the VBA, with the most recent record from 2019. This species has a large home range and so is likely to occur on site at least occasionally during foraging. The presence of hollows in a number of the trees within the Study Site are likely to support prey items for this species such as Ring-tail Possum.

3.3.3.2 Medium Likelihood of Occurrence

Two species are considered to have a 'Medium' likelihood of using the habitat on-site: Grey-headed Flying-fox *Pteropus poliocephalus* and White-throated Needletail *Hirundapus caudacutus.*

There are seven recent records for Grey-headed Flying-fox surrounding the Study Site. Some suitable habitat is present on site, that is why this species is likely to occur at least occasionally, particularly while foraging. However, this species is not likely to make significant use of the site.

There are multiple recent records of White-throated Needletail near the Study Site. This species is almost exclusively aerial, from heights of less than 1 m up to more than 1000 m above the ground. Because they are aerial, it has been stated that conventional habitat descriptions are inapplicable. This species rarely lands and feeds on invertebrates 'on the wing'. This species could potentially feed over this site.

3.3.3.3 Low-Medium Likelihood of Occurrence

Three species have a 'Low-Medium' likelihood of using the habitat on site: Eltham Copper Butterfly *Paralucia pyrodiscus lucida,* Brush-tailed Phascogale *Phascogale tapoatafa* and Azure Kingfisher *Alcedo azurea.*

Eltham Copper Butterfly has a 'Low-Medium' likelihood of using the habitat on site as this species requires specific host plant species. There are some scattered individuals of this host plant – Sweet Bursaria – within the site. While populations of Eltham Copper Butterfly have been recorded less than two kilometres away from the site (Wildlife Experiences 2019) and there are multiple other recent records within the five-kilometres around the site, habitat on site is sub-optimal however given the scattered nature of the Sweet Bursaria that are present. The site may have an occasional Eltham Copper Butterfly fly through but is unlikely to support breeding of the species.

There are only a few records for Brush-tailed Phascogale, however this includes records quite recently. This species typically inhabits dry forest and woodland dominated by box, ironbark and stringybark eucalypts but may also occur in wetter forests {Menkhorst, 1996 #4963}. Prefers open forest with sparse groundcover, but uses habitats ranging from mallee to rainforest. The species has potential to occur on site, but is unlikely to be present in extensive numbers.

There are also multiple recent records around the Study Site for Azure Kingfisher. However, this species is usually found near well-vegetated wetlands. Azure Kingfisher may occur while on passage, but is unlikely to make significant use of the site.

4. RELEVANT POLICY AND LEGISLATION

The following section explores relevant policy and legislation pertaining to ecology from the national level through to the local level.

4.1 Environment Protection and Biodiversity Conservation Act 1999

The *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) applies to sites where proposed developments or projects may have a significant impact on matters of National Environmental Significance (NES). There are currently seven matters of National Environmental Significance:

- World Heritage properties
- National Heritage places
- nationally listed threatened species and ecological communities
- listed migratory species
- Ramsar wetlands of international importance
- Commonwealth marine areas
- nuclear actions (including uranium mining).

Under the EPBC Act, a proponent must refer proposed actions that may have a significant impact on matters of national environmental significance to the Australian Government Environment Minister (or delegate)

Relevance to proposal

Flora Species

There are two flora species protected under this *Act* likely to occurs within the five kilometre of the site (refer to Appendix 2) They are Clover Glycine and Matted Flax-lily. However, they have a "Low-Medium" likelihood of occurring on site. Development within the Study Site is not likely to have a significant impact on these species; a referral based on the potential presence of these species is not recommended.

Fauna Species

There are a number of fauna species listed under the EPBC Act that have been previously recorded within a five-kilometre of the Study Site (refer to Appendix 3). Of these species, one fauna species protected under this *Act* are considered to have a 'high' likelihood of occurring with the site: Swift Parrot.

Swift Parrot is listed as Critically Endangered under the EPBC Act. As outlined in Section 3.3.3 above, the species has a high likelihood of occurrence within the Study Site, particularly given the presence of Yellow Box trees which are a key foraging species listed in Saunders Tzaros (2011). Swift Parrot is however only likely to occasionally use the foraging resources available on site when going to and from other habitat in Tasmania for breeding, and in northern Victoria for prolonged overwinter foraging.

Under the current development plan (refer to Appendix 7), it is likely that the following Yellow Box trees will need to be removed to accommodate the establishment of two additional lots on the property: Tree 20 (49cm DBH); Tree 34 (53cm DBH), Tree 46 (22cm DBH), Tree 49 (25cm DBH) and Tree 58 (18cm DBH).

To determine if the impacts on habitat values for the Swift Parrot would result in a significant impact on these EPBC listed species, a review against the Matters of National Environmental Significance – Significant Impact Guidelines (DoE 2013) was undertaken. Based on this review the following is relevant in the context of the proposal to subdivide the site which will result in the removal of a selected number of trees likely to be used for occasional foraging:

- The proposal is not likely to lead to a long-term decrease in the size of a population of Swift Parrot
- The proposal is not likely to *reduce the area of occupancy of the species* as the Study Site acts as a movement pathway for the species, and is not considered a seasonal occupancy site
- The proposal is not likely to fragment an existing population into two or more populations
- The proposal is not likely to *adversely affect habitat critical to the survival of a species* as priority habitat for conservation has been identified in multiple state and regional parks throughout Victoria but are not within 5 km of the study area. (Saunders & Tzaros, 2011)
- The proposal will not *disrupt the breeding cycle of a population* as breeding grounds are in Tasmania
- The proposal is not likely to modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline
- The proposal will not result in invasive species that are harmful to a critically endangered or endangered species becoming established in the endangered or critically endangered species' habitat
- The proposal is not likely to introduce disease that may cause the species to decline
- The proposal is not likely to *interfere with the recovery of the species* as the habitat available in the Study Site is part of a 'movement pathways' for the species, and the National Recovery Plan states that: 'Further information is required to identify potential movement pathways, the importance of such pathways and potential threats that occur in these areas'

Based on the above, the removal habitat for foraging that may occasionally be used by Swift Parrot during migration, which includes Yellow Box trees in particular, is not likely to have a significant impact on this species as defined under the EPBC Act. None-the-less, consideration should be given to referring the action to the federal government department for further legal certainty around the potential use of the site by Swift Parrot. The decision to complete a referral can be preceded by a pre-referral meeting with the Department of Agriculture, Water and the Environment (DAWE).

For other species of fauna listed under the EPBC Act that have a moderate or lower likelihood of occurrence, including Grey-headed Flying-fox and Eltham Copper Butterfly, a significant impact on these species is not expected. These species can however be considered in further detail alongside Swift Parrot however the recommendation be made to refer the project to the DAWE.

4.2 Flora and Fauna Guarantee Act 1988

The *Flora and Fauna Guarantee Act 1988* (FFG Act) was legislated to ensure the continued survival of all Victorian species of flora and fauna and all Victorian communities of plants and animals. The FFG Act provides a number of ways to help achieve its objectives including:

- listing of threatened taxa, communities of flora or fauna and potentially threatening processes, and creation of Action Statements and Management Plans for all listed taxa communities of flora or fauna and processes
- declaration of a Critical Habitat if the habitat is critical for the survival of a species or a community of flora or fauna, if listed as Critical Habitat, the Minister for Environment may then make an Interim Conservation Order (ICO) to conserve the Critical Habitat (NB: no Critical Habitat has been declared in the State)
- protection of flora and fauna through listing offences such as penalties relating to not following an ICO and taking, trading in, keeping, moving or processing protected flora without a licence. (NB: this does not apply to taking protected flora from private land (other than land which is part of the critical habitat for the flora) except for taking tree-ferns, grasstrees or sphagnum moss for the purpose of sale.

The Department of Environment, Land, Water and Planning (DELWP) is the referral authority for matters under the FFG Act.

4.2.1 Threatened Species

There are nine flora species and 27 fauna species listed under the FFG Act 1988 recorded within a 5 km radius of the study area; six of these, the Matted Flax-lily, Swift Parrot, Brush-tailed Phascogale, Grey-headed Flying-fox, Eltham Copper and Powerful Owl may potentially occur on site.

Relevance to proposal

Powerful Owl in addition to the fauna and flora species listed in section 4.1 are listed under this Act.

As the FFG Act applies to public land only, the Study Site is therefore not concerned by the requirements of this *Act*.

Regardless, due to the potential for several fauna species listed under the Act to occur within the site, or within close proximity, it is recommended that mitigation measures be implemented for this species, including Powerful Owl, Swift Parrot, Eltham Copper Butterfly and Grey-headed flying fox

4.2.2 Threatened Communities

The FFG Act also provides for the listing of communities of flora and fauna which are threatened. The Scientific Advisory Committee (SAC) has produced a set of descriptions of Victorian Threatened Communities. The purpose of the descriptions is to help field recognition of the various communities of flora and fauna currently listed as 'threatened' under the Flora and Fauna Guarantee Act.

Relevance to proposal

None of the vegetation at the site has been identified as matching a description of a threatened community as provided by SAC. It is therefore unlikely the proposal will have any impact on communities listed under this Act.

4.3 Planning and Environment Act 1987

The *Planning and Environment Act 1987* establishes the framework for planning the use, development and protection of land in Victoria in the present and long-term interests of all Victorians. This includes providing the structure for and administering the implementation of Planning Schemes in each municipality through the Victorian Planning Provisions (VPPs). Planning Schemes are legal instruments outlining provisions for land use, development and protection. They are constructed and sourced from the VPPs.

The following section considers relevant sections of the Planning Scheme.

4.3.1 State Planning Policy Framework

Clause 12 Environmental and Landscape Values

Clause 12 of the planning scheme recognises that planning:

- should help to protect the health of ecological systems and the biodiversity they support (including ecosystems, habitats, species and genetic diversity) and conserve areas with identified environmental and landscape values.
- must implement environmental principles for ecologically sustainable development that have been established by international and national agreements.
- should protect sites and features of nature conservation, biodiversity, geological or landscape value.

Clauses of particular relevance include:

- Clause 12.01-1 Protection of biodiversity
- Clause 12.01-2 Native vegetation management

Relevance to proposal

The objectives of these clauses are considered in the body of this report that relate to avoiding and minimising impacts to biodiversity.

4.3.2 Zoning

The site is zoned Neighbourhood Residential Zone – Schedule 1 (NRZ1). The purpose of this NRZ is:

- to implement the Municipal Planning Strategy and the Planning Policy Framework.
- to recognise areas of predominantly single and double storey residential development.
- to manage and ensure that development respects the identified neighbourhood character, heritage, environmental or landscape characteristics.
- to allow educational, recreational, religious, community and a limited range of other non-residential uses to serve local community needs in appropriate locations

A permit is required to subdivide land zoned Neighbourhood Residential Zone. As the site is proposed to be subdivided It will need to meet all the requirements of Clause 56, except Clause 56.02-1, Clauses 56.03-1 to 56.03-4, Clause 56.05-2, Clause 56.06-1, Clause 56.06-3 and Clause 56.06-6.

Under this zone, the Study Site also requires a permit to construct a building, and construct or carry out works on each future lot (exemptions apply) in the future. Associated requirements given the size of the proposed lots include:

- 35% as a minimum percentage of a lot set aside as garden area
- development must meet the requirements of Clause 54.
- the building height must not exceed 9 metres (exemptions apply); and
- the building must contain no more than 2 storeys at any point (exemptions apply)

An application under Neighbourhood Residential Zone must be accompanied by the following information, as appropriate:

- For a residential development, the neighbourhood and site description and design response as required in Clause 54 and Clause 55.
- For an application for subdivision, a site and context description and design response as required in Clause 56.
- Plans drawn to scale and dimensioned which show:
    - Site shape, size, dimensions and orientation.
    - The siting and use of existing and proposed buildings.
    - Adjacent buildings and uses, including siting and dimensioned setbacks.
    - The building form and scale.
    - Setbacks to property boundaries.
- The likely effects, if any, on adjoining land, including noise levels, traffic, the hours of delivery and despatch of good and materials, hours of operation and light spill, solar access and glare.
- Any other application requirements specified in a schedule to this zone.

If in the opinion of the responsible authority an application requirement is not relevant to the evaluation of an application, the responsible authority may waive or reduce the requirement.

4.3.3 Environmental Significance Overlay – Schedule 1

Clause 42.01 Environmental Significance Overlay – Schedule 1 applies to this site, under which the site is identified as having an important natural bush setting. The key purposes of this overlay are:

- To implement the Municipal Planning Strategy and the Planning Policy Framework.
- To identify areas where the development of land may be affected by environmental constraints.
- To ensure that development is compatible with identified environmental values

The landscape character objectives to be achieved under this Schedule are:

- To provide for housing in a residential location in a bushland setting.
- To provide for sensitive siting of buildings and works, access and earthworks and by the restoration of native vegetation where considered appropriate.
- To provide for conservation and enhancement of the environmental values of the area.
- To ensure that the development of land and the removal of native vegetation are not detrimental to the natural environment and character of the area.
- To minimise the threats to the natural environment through the unnecessary removal of vegetation in these areas.

Permits Required:

Under this overlay, a permit is required to construct a fence. This does not apply:

- If the fence is of post and wire construction; or
- If the fence is a transparent safety fence for a swimming pool located in the immediate vicinity of the swimming pool.

A permit is required to remove, destroy or lop native vegetation. This does not apply:

- If the lopping of vegetation is undertaken to assist its regeneration; or
- If the vegetation is dead or
- To the partial removal of branches directly overhanging dwellings, garages or outbuildings; or
- If the vegetation is identified as a pest plant in the Shire of Nillumbik Environmental Weed List 2009 as incorporated in this scheme; or
- If the vegetation is Kunzea leptospermoides (Yarra Burgan) and is being removed for fire prevention purposes.

A permit is also required to construct a building or construct or carry out works. A permit may not be required to construct certain building type or carry out specific works, including:

- New driveways where the surface is porous and the excavation is less than 500mm in depth and is undertaken at a distance of more than 5 metres from the base of a substantial native tree.
- Any excavation less than 500mm in depth where the excavation is undertaken at a distance of more than 5 metres from the base of any substantial native tree.
- All paving other than driveways where excavation does not exceed 500mm in depth and is at a distance of more than 5 metres from the base of any substantial native tree.

For the purpose of this clause a substantial native tree means a tree indigenous to Victoria that has a trunk circumference greater than 0.5m at one metre above ground level.

Decision guidelines:

Before deciding on an application to subdivide land, construct a building or carry out works, the responsible authority must consider, as appropriate:

- The role of the vegetation in contributing to the character and appearance of the area.
- The objectives and recommendations of the Nillumbik Siting and Design Guidelines.
- Any other design and siting guidelines adopted by the responsible authority.
- The need to screen buildings and structures to maintain the character of the area.

Relevance to proposal

While there will be vegetation removal within the Study Site to accommodate the proposed subdivision, attempts have been made to meet the objectives of this overlay by minimising the tree impacts through the siting of the proposed building envelopes. These have been positioned as much as possible in existing understorey clearings. They have also been designed to impact as less as possible the TPZ of trees with high retention through working with an arborist to minimise impacts on trees and to provide remedial and tree protection information.

4.3.4 Significant Landscape Overlay – Schedule 2

Clause 42.03 Significant Landscape Overlay applies to the site. Key purposes of this overlay are:

- To implement the Municipal Planning Strategy and the Planning Policy Framework.
- To identify significant landscapes.
- To conserve and enhance the character of significant landscapes.

The objectives to be achieved under this overlay and the Environmental Significance Overlay – Schedule 1 are the same.

Permits requirement

Under this overlay, a permit is required to:

- Construct a building or construct or carry out works
- Construct a fence
- Remove, destroy or lop native vegetation.

Similar exemptions than Environmental Significance Overlay – Schedule 1 apply to all of the permit requirements mentioned above.

Decision guidelines

The decision guidelines of this overlay and the Environmental Significance Overlay – Schedule 1 are the same.

Relevance to proposal

In the same way as for Clause 42.01 Environmental Significance Overlay – Schedule 1, the attempts to minimise the impact on native vegetation are answering the requirement of this overlay.

4.3.5 Clause 52.17

Under Clause 52.17, a permit is required to remove, destroy or lop native vegetation on sites greater than 0.4 hectares. Clause 52.17 requires a planning permit for the removal of native vegetation (exemptions apply). The purpose of the clause (amongst others) is to minimise impacts on Victoria's biodiversity from the removal of native vegetation and to manage native vegetation to minimise land and water degradation.

Relevance to proposal

The approval of a subdivision that creates lots smaller than 0.4 hectares will allow the 'site area' exemption to be relied on once the subdivision has taken place. This would mean that when the lots are less than 0.4ha following subdivision approval, any native vegetation within these subdivided lots could be removed without a Clause 52.17 permit to remove native vegetation. These rules around lot size and native vegetation removal stems from the 2005 Villawood VCAT decision (Villawood Properties v Greater Bendigo CC VCAT 2703 (20 December 2005). This case concluded that when dealing with subdivisions, native vegetation (within a lot with a development zone) should not be regarded as being retained. This exemption does not however apply to native vegetation on a roadside or rail reservation. This loss must be included in the extent of the permit being considered.

Based on the above, native vegetation within the future lots needs to be regarded as lost when calculating the area of native vegetation to be removed. Section 6 of this report seeks to respond to this requirement and outlined associated offset requirements associated with this removal.

4.4 Wildlife Act 1975 and Wildlife Regulations 2013

The *Wildlife Act 1975* provides for the protection and conservation of native wildlife (fauna) within Victoria. It also provides the basis for the majority of wildlife permit/licensing requirements within the state. Under the Act a person must not hunt, take or destroy endangered, notable or protected wildlife; this includes all native vertebrate animals, all kinds of deer, non-indigenous quail, pheasants, and partridges, and all terrestrial invertebrate animals listed under the Flora and Fauna Guarantee Act 1988.

The *Wildlife Regulations 2013* provide further detail relating to the act, including that a person not to damage, disturb or destroy any wildlife habitat (s42), although this does not apply if the person is authorised to do so under any other Act such as the *Planning and Environment Act 1987.*

Relevance to proposal

It is unlikely a separate permit is required under this Act as damage should only be to wildlife habitat and not wildlife. However, if any wildlife is located within the habitat proposed for clearing, which is possible as there were numerous hollows observed on site, salvage and translocation of such wildlife may be required as part of the planning permit. This should also ensure wildlife is not damaged during construction works.

4.5 Catchment and Land Protection Act 1994

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.

Under section 20 of the (Catchment and Land Protection Act 1994) CaLP Act, all land owners, including the Crown, public authorities and licensees of Crown lands, must, in relation to their land, take all reasonable steps to:

- avoid causing or contributing to land degradation which causes or may cause damage to land of another land owner;
- eradicate regionally prohibited weeds;
- prevent the growth and spread of regionally controlled weeds on their land;
- prevent the spread of, and as far as possible, eradicate established pest animals.

These are also provisions within the Act to prevent the spread of declared noxious weeds, through regulating the purchase, sale, possession for the purposes of sale, display, propagation or transport of these species into or within Victoria. Furthermore, under the Act it is prohibited to bring into Victoria, keep, sell or release declared pest animals without an authority (permit).

Declared noxious weeds are categorised into four groups depending on their known and potential impact and specific circumstances for each region. These categories are:

- 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 these weeds are not necessarily widespread but have the potential to become widespread. It is expected

that weeds that meet this criteria can be eradicated from the region. For weeds considered to be Regionally Prohibited 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 prevent further spread. It is the responsibility of the landowner to control these weeds on their property and on adjacent roadside reserves.

- Restricted Weeds (R) include plants that pose unacceptable risk of spreading in the State or other Australian states and are considered to be a serious threat to primary production, Crown land, the environment and/or community health if they were traded in Victoria. Trade in these weeds and there propagules, either as plants, seeds or contaminants in other material is prohibited.

Relevance to proposal

There were three weeds declared noxious under the *Catchment and Land Protection (CaLP) Act 1994* identified on the site. The follow table lists the declared noxious weed observed on site.

Table 7. Declared noxious weed occurring within the study area

Scientific Name	Common Name	Control Category (Port Phillip)
**Crataegus monogyna*	Hawthorn	C
**Oxalis pes-caprae*	Soursob	R
**Watsonia meriana var. bulbillifera*	Bulbil Watsonia	C

Established pest animals potentially occurring on the site include:

Table 8. Declared established pest animals potentially occurring on site

Common Name	Scientific Name
European Rabbit	**Oryctolagus cuniculus*
Red Fox	**Vulpes vulpes*

5. DEVELOPMENT PROPOSAL

The current proposal is to subdivide the current allotment into three separate lots. The existing dwelling on the north side of the Study Site will be retained on one lot, with two additional building envelopes established on the two lots to be established on the site. Driveway access to these two new lots will occur along the eastern and western perimeters of the site. Site plans for this proposed development are provided in Appendix 7.

6. NATIVE VEGETATION IMPACT ASSESSMENT

This section addresses the proposed native vegetation impacts associated with this permit application to subdivide the Study Site. A permit is required to remove native vegetation on the site as outlined in the Native Vegetation Clause 52.17 of the planning scheme and detailed in the *Guidelines for the removal, destruction and lopping of native vegetation* (DELWP 2017a).

The purpose of clause 52.17 and 'the Guidelines' is to ensure a no net loss to biodiversity as a result of removal or loss of native vegetation. This is achieved in three steps:

1. Avoid the removal, destruction or lopping of native vegetation
2. Minimise impacts from the removal where native vegetation cannot be avoided and,
3. Provide an offset to compensate for the biodiversity impact if a permit is granted

6.1 Assessment Pathway

An application to remove, destroy or lop native vegetation must be classified as one of the following assessment pathways:

- basic
- intermediate
- detailed

The application requirements and decision guidelines in Clause 52.17 must be applied in accordance with the relevant assessment pathway.

To determine the assessment pathway, two factors are considered in relation to the native vegetation proposed to be removed:

- the location category (shown in the location map as location 1, 2 or 3)
- the extent of proposed native vegetation removal

Table 9. Determining the Assessment Pathway

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

Source: Table 3, *Guidelines for the removal, destruction or lopping of native vegetation* (DELWP 2017a)

6.1.1 Location category

The location category has been determined for all of Victoria. Native vegetation will be in either Location 1, 2 or 3 as outlined below

- Location 3 – includes locations where the removal of less than 0.5 hectares of native vegetation could have a significant impact on habitat for a rare or threatened species.
- Location 2 – includes locations that are mapped as endangered EVCs and/or sensitive wetlands and coastal areas are not included in Location 3
- Location 1 – includes all remaining locations in Victoria.

The vegetation to be removed is in Location 1. Figure 5 below shows the location risk.

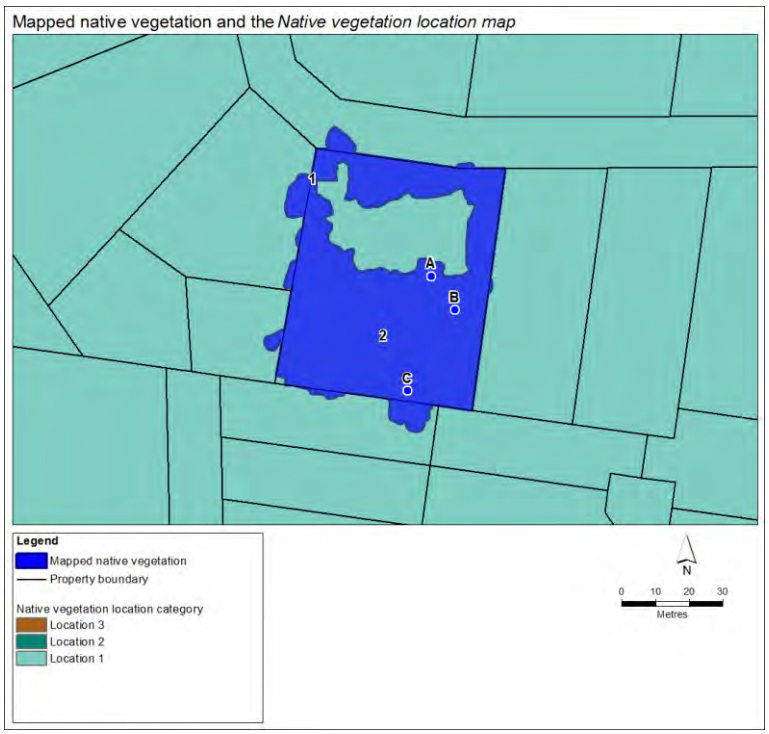

Figure 5. Location category for vegetation to be removed

6.1.2 Extent of impact from proposed development

As outlined in 'The Guidelines', an application must consider:

- the proposal and all buildings and works that could impact on existing native vegetation, including mapped wetlands.
- Consider any ancillary uses, utilities, access and earthworks associated with the use or development and any defendable space requirements.
- The full extent of native vegetation removal must be considered.

- Assumed losses account for indirect loss of native vegetation for example, encroachment into tree protection zones, loss from changed water flows and shading.

An approved development (which includes the proposed pavilions and a 10m Construction Zone buffer) will result in impact to 0.348 ha of Habitat Zone. This is shown on Map 3.

6.2 Assessment pathway

As the vegetation is within Location 1, three large trees will be impacted and the clearing is less than 0.5 ha, the proposed clearing within the site follows the Intermediate assessment pathway.

Table 10 presents the application requirements to remove native vegetation under Clause 52.17 as provided in *the Guidelines for the removal, destruction and lopping of native vegetation* (DELWP 2017a) and details whether these have been met.

Table 10. Application requirements for applications for a permit to remove native vegetation

No.	Application requirements	Assessment Pathway	Provided/response
		Basic and Intermediate	
1	Information about the native vegetation to be removed, including: • the assessment pathway and reason for the assessment pathway. This includes the 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 • the offset requirement, determined that will apply if the native vegetation is approved to be removed.	Native Vegetation Removal (NVR) Report And Section 6.1.2	Yes ☒ No ☐ N/a ☐
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.	Shown in Map 1-3	Yes ☒ No ☐ N/a ☐
3	Recent photographs (dated) of the native vegetation to be removed.	Section 3.1	Yes ☒ No ☐ N/a ☐
4	Details of any other native vegetation approved to be removed, or that was removed without the required approvals, on the same property or on contiguous land in the same ownership as the applicant, in the five year period before the application for a permit is lodged.	None	Yes ☒ No ☐ N/a ☐
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	Section 6.3	Yes ☒ No ☐ N/a ☐

No.	Application requirements	Assessment Pathway	Provided/response
		Basic and Intermediate	
	focussed on areas of native vegetation that have the most value.		
6	A copy of any property vegetation plan that applies to the site.	N/A	Yes ☐ No ☐ N/a ☒
7	Where the removal of native vegetation is to create defendable space, a written statement explaining why the removal of native vegetation is necessary. This is not required when the creation of defendable space is in conjunction with an application under the Bushfire Management Overlay.	N/A	Yes ☐ No ☐ N/a ☒
8	If the application is under Clause 52.16, a statement that explains how the proposal responds to the Native Vegetation Precinct Plan	N/A	Yes ☐ No ☐ N/a ☒
9	An offset statement explaining that an offset that meets the offset requirements for the native vegetation to be removed has been identified and how it will be secured.	Section 6.5	Yes ☒ No ☐ N/a ☐
10	A site assessment report of the native vegetation to be removed, completed by an accredited native vegetation assessor.	Section 3.1.3 (detailed)	Yes ☒ No ☐ N/a ☐
11	Information about impacts on rare or threatened species habitat	Appendix 2 (detailed)	Yes ☒ No ☐ N/a ☐

6.3 Avoid and Minimising impacts to biodiversity

Table 11 details the steps that have been applied to avoid and minimise biodiversity impacts of the proposed development.

Table 11. Steps taken to avoid and minimise biodiversity impacts

Steps taken to avoid and minimise biodiversity impacts
• Minimises impact to Large Trees by designing adequate building envelopes • Minimises impact to Large Tree by locating proposed development as far as possible from the TPZ • Minimises impact by locating proposed development next to an already developed area which reduces development extent and allows construction works to use existing carpark area for access.

6.4 Native vegetation removal requirements

The Native Vegetation Removal report is provided by DELWP (2018e) as per the clearing outlined above. A summary of the report is given in Table 12 and the full report is provide in Appendix 4.

Table 12. Summary of native vegetation to be removed

Summary Item	Result
Assessment pathway	Intermediate
Total extent	0.352 ha
Remnant patches	0.352 ha
Large trees within remnant patch	3
Scattered Trees (small)	0
Scattered Trees (large)	0
Location category	1
Strategic biodiversity value score of all marked native vegetation	0.260

Offset targets

If a permit is granted to remove the selected vegetation, a requirement to obtain a native vegetation offset will be included in the permit conditions. The offset must meet the following requirements:

Table 13. Offsets required if a permit is granted

Offset type	Offset requirements	
	Offset amount	Offset attributes
General	0.066 general habitat units	• Offset must be within Port Phillip and Westernport Catchment Management Authority CMA or Nillumbik Shire Council • Offset must have a minimum strategic biodiversity value of 0.208 • 3 large trees

6.5 Offset Strategy

All applications that require a permit to remove native vegetation must include an offset strategy as a part of the application.

Offsets can be either:

- First party – located on land owned by the landholder who is proposing to remove the native vegetation
- Third party – located on land owned by a third party

The offsets that are required to account for vegetation loss on site are to be achieved by creating third party offsets off-site. The required offsets are available from multiple brokers. A list of sites meeting the requirements for general offsets is provided in Appendix 5.

7. RECOMMENDATIONS

7.1 Pre-construction considerations

7.1.1 Fauna

Effort should be made to ensure any wildlife located within any area proposed for clearing is carefully salvaged and relocated from the works areas. This should also ensure minimal wildlife damage during the works.

7.2 During construction recommendations

Any works that are undertaken on the property as part of the development may have impacts on the existing vegetation on site or have the potential to increase weeds due to disturbance. Recommendations to manage these potential impacts are provided below.

7.2.1 Native vegetation

Native vegetation has been identified and mapped across the site. The works area should be clearly flagged out to avoid impacts to adjacent areas of native vegetation and trees indicated as retainable in the Arboricultural Assessment & Report from Stem Arboricultural Consulting.

7.2.2 Weeds and pathogens

To minimise the risk of introducing weeds onto the site, machinery should be cleaned prior to use and all effort should be made to ensure any materials utilised on the site is clean and free of weed seeds and pathogens.

7.2.3 Management of construction site

The construction site should be clearly marked and managed so that minimise area been impacted. This will include keeping construction works to the areas identified as works zone, access, vehicle movement and storage of materials

To ensure the flora and fauna values identified on site are protected as much as possible:

- construction works to be confined to designated 'Go-Zones', where construction activities and access will take place;
- temporary fencing, to be installed around the 'Go-Zones' to limit the movement of vehicles and machinery; where there is the potential for subsurface harm to root zones the use of above ground footings should be considered
- erosion and sediment control measures to be implemented, including;
    - drainage management

- soil stabilisation measures alongside construction zones near areas likely to exhibit erosion;
- protocols around management and location of stockpiles, along with restrictions on vehicle movement through fencing;
- sediment barriers to be erected where necessary to prevent sediment laden runoff

- waste management and chemical management to be undertaken to reduce risk of contamination of areas containing flora and fauna values;
- areas of native vegetation that may be excavated should have the soil managed appropriately to ensure that the seed bank is utilised in remediation.

7.3 Post construction recommendations

7.3.1 Site remediation

Remediation of the site post construction works is important to minimise degradation of the construction site and adjacent areas. Post construction works include the following activities:

- Undertake weed control prior to spreading any topsoil over fill area.
- Scratching of soil within fill area and all other areas within the construction zone to 50mm followed by at least two rounds of follow up weed control
- Direct seeding of construction zone areas with indigenous grasses in autumn following completion of works. Seeding rates should include approximately 75% C3 species and 25% C4. Direct Seeding rates should be at least 20kg per hectare.
- Restitution of logs removed or felled from the construction area to appropriate areas, without impact to native vegetation to provide fauna habitat.

7.3.2 Revegetation establishment recommendations

Where revegetation is proposed for establishment following construction, it is recommended that all vegetation is to be established by:

- indigenous seed or seedlings sourced from at least ten parent plants from within viable populations matched to the site in terms of soil type, altitude, topography, aspect and climate and located within Nillumbik Shire boundary

After planting, the area should be mulched 75mm deep with recycled hardwood of 12–20mm sizing. It would also be beneficial to install tree guards around trees and large shrubs. Watering should occur at time of planting and as required over the first three months of establishment. Watering is recommended to occur in times of lower than average rainfall within the first two years.

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Appendix 1. Flora recorded at Study Site

The following table provides a list of flora recorded in the study area during fieldwork.

Conservation status under EPBC Act 1999: EX: Extinct, CR: Critically endangered, EN: Endangered, VU: Vulnerable and CD: Conservation dependant	**Conservation status under FFG Act 1988:** L: Listed, N: Nominated, R: Rejected, D: Delisted, I: Invalid
Victorian Rare or Threatened Species (VROT) (DEPI 2014) x: Presumed extinct, e: Endangered, v: Vulnerable, r: rare and k: poorly known	**Origin** *: exotic species; #: Victorian native species extended beyond natural range; Empty: Indigenous species

* denotes exotic species # denotes native species extended beyond natural range

Family	Origin	Scientific Name	Common Name	EPBC	FFG	VROT
Alliaceae	*	*Agapanthus praecox subsp. orientalis*	Agapanthus			
Poaceae	*	*Anthoxanthum odoratum*	Sweet Vernal-grass			
Poaceae	*	*Bromus diandrus*	Great Brome			
Cyperaceae	*	*Cyperus eragrostis*	Drain Flat-sedge			
Poaceae	*	*Dactylis glomerata*	Cocksfoot			
Poaceae	*	*Ehrharta erecta*	Panic Veldt-grass			
Poaceae	*	*Ehrharta longiflora*	Annual Veldt-grass			
Poaceae		*Microlaena stipoides var. stipoides*	Weeping Grass			
Cyperaceae		*Oreobolus oxycarpus subsp. oxycarpus*	Tuft-rush			r
Poaceae	*	*Paspalum dilatatum*	Paspalum			
Poaceae		*Rytidosperma racemosum var. racemosum*	Slender Wallaby-grass			
Poaceae	*	*Stenotaphrum secundatum*	Buffalo Grass			
Iridaceae	*	*Watsonia meriana var. bulbillifera*	Bulbil Watsonia			
Mimosaceae		*Acacia mearnsii*	Black Wattle			
Mimosaceae		*Acacia melanoxylon*	Blackwood			
Pittosporaceae		*Bursaria spinosa subsp. spinosa var. spinosa*	Sweet Bursaria			
Myrtaceae		*Callistemon spp.*	Bottlebrush			
Asteraceae		*Cassinia longifolia*	Shiny Cassinia			
Gentianaceae	*	*Centaurium erythraea*	Common Centaury			
Chenopodiaceae	*	*Chenopodium album*	Fat Hen			
Ranunculaceae		*Clematis microphylla s.l.*	Small-leaved Clematis			
Rosaceae	*	*Crataegus monogyna*	Hawthorn			
Convolvulaceae		*Dichondra repens*	Kidney-weed			
Chenopodiaceae		*Einadia nutans*	Nodding Saltbush			
Asteraceae	*	*Erigeron bonariense*	Flaxleaf Fleabane			
Geraniaceae		*Erodium spp.*	Heron's Bill			
Myrtaceae		*Eucalyptus goniocalyx s.l.*	Bundy			

Myrtaceae		*Eucalyptus macrorhyncha*	Red Stringybark
Myrtaceae		*Eucalyptus melliodora*	Yellow Box
Myrtaceae		*Eucalyptus rubida*	Candlebark
Santalaceae		*Exocarpos cupressiformis*	Cherry Ballart
Rubiaceae	*	*Galium aparine*	Cleavers
Fabaceae	*	*Genista monspessulana*	Montpellier Broom
Asteraceae	*	*Hypochaeris radicata*	Flatweed
Myrtaceae		*Kunzea ericoides s.l.*	Burgan
Asteraceae	*	*Lactuca serriola*	Prickly Lettuce
Oleaceae	*	*Ligustrum spp.*	Privet
Malvaceae	*	*Modiola caroliniana*	Red-flower Mallow
Solanaceae	*	*Nicotiana glauca*	Tree Tobacco
Oxalidaceae	*	*Oxalis pes-caprae*	Soursob
Pittosporaceae	#	*Pittosporum undulatum*	Sweet Pittosporum
Plantaginaceae	*	*Plantago lanceolata*	Ribwort
Portulacaceae		*Portulaca oleracea*	Common Purslane
Rosaceae	*	*Prunus spp.*	Prunus
Asteraceae	*	*Sonchus oleraceus*	Common Sow-thistle
Asteraceae	*	*Taraxacum officinale spp. agg.*	Garden Dandelion
Fabaceae	*	*Vicia spp.*	Vetch
Apocynaceae	*	*Vinca major*	Blue Periwinkle
Vitaceae	*	*Vitis spp.*	Grape

Appendix 2. Potentially occurring rare or threatened flora species

Conservation status under EPBC Act 1999: EX: Extinct, CR: Critically endangered, EN: Endangered, VU: Vulnerable and CD: Conservation dependant	**Conservation status under FFG Act 1988:** L: Listed, N: Nominated, R: Rejected, D: Delisted, I: Invalid	**Victorian Rare or Threatened Species (VROT) (DEPI 2014)** x: Presumed extinct, e: Endangered, v: Vulnerable, r: rare and k: poorly known A*= All infraspecific taxa included in Advisory List

EPBC	FFG	VROT	Origin	Scientific name	Common name	Habitat/species notes	Last record	No. individuals	Likelihood occurrence	Likelihood Reasoning
		r	#	Acacia howittii	Sticky Wattle	Indigenous to the Tarra Valley and surrounds, central Gippsland, Victoria. It is also widely cultivated. Prefers moist forests and sheltered areas {Tame, 1992 #44`, pp. 79-80}.	2014	4	Low	Not observed; if it were present, it is highly likely to have been observed on site.
	L	v		*Callitriche brachycarpa*	Short Water-starwort	In Victoria currently known only from the Otway Ranges and adjacent plains, and northern outskirts of Melbourne on sites subject to inundation. {Walsh, 1999 #2869', pp 461-67}; although, a more recent (2009) record was taken near Leongatha.	2013	1	Low	Unsuitable habitat
EN	L	e		Caladenia robinsonii	Frankston Spider-orchid	Rare, with extremely limited distribution, near Rosebud on the Mornington Peninsula, grows in well-drained deep sandy soil in coastal heathy woodland, or in red sandy loam in grassy woodland {Australian Plants Society Maroondah, 2001 #1198;Walsh, 1994 #2867`, pp. 781-82;Jeanes, 2006 #5964}.	1904	1	Low	Single record is old; Unsuitable habitat

EPBC	FFG	VROT	Origin	Scientific name	Common name	Habitat/species notes	Last record	No. individuals	Likelihood occurrence	Likelihood Reasoning
		A*		Cardamine tenuifolia	Slender Bitter-cress	On moist to wet soils subject to inundation throughout southern Victoria; in streams, swamp margins, plains grassland, and sclerophyll forest valleys {Walsh, 1996 #2868`, p. 438;Australian Plants Society Maroondah, 2001 #1198}.	1978	1	Low	Single record is old
		k		Caladenia australis	Southern Spider-orchid	Mainly distributed in hinterland or coastal southern Victoria, in well-drained soil of heath, heathy woodland, and dry sclerophyll lowland forest {Walsh, 1994 #2867`, p. 780;Jeanes, 2006 #5964;Australian Plants Society Maroondah, 2001 #1198}.	1931	1	Low	Single record is old
		r		Corybas fimbriatus	Fringed Helmet-orchid	Forms colonies, mainly in coastal scrub, and heath, also in lowland sclerophyll forest valleys, and heathy woodland; usually on moist, shaded sandy soil with leaf and bark litter. Distribution is mostly east of Westernport, but with isolated colonies on north-eastern outskirts of Melbourne; flowers May to July. {Australian Plants Society Maroondah, 2001 #1198`, p. 836;Jeanes, 2006 #5964;Walsh, 1994 #2867}.	2011	5	Low	Suitable Habitat, however, there is no recent record in the vicinity of the Study Site.
		r		Diuris X palachila	Broad-lip Diuris	Known from a few localities in western Victoria in open forests, woodlands and grasslands. Thought to be a natural hybrid between D. behrii and D. pardina with which it usually occurs. A more common hybrid of similar morphology can arise between D. pardina and D. chryseopsis {Royal Botanic Gardens Victoria, 2015 #11694}.	1925	1	Low	Single record is old

EPBC	FFG	VROT	Origin	Scientific name	Common name	Habitat/species notes	Last record	No. individuals	Likelihood occurrence	Likelihood Reasoning
	R			Eucalyptus camaldulensis	River Red-gum	Flowers summer. Widespread along rivers of all continental Australia. In Gippsland apparently no further east than the Mitchell River. {VicFlora, 2015 #11694}	2019	24	Low	Not observed; if it were present, it is highly likely to have been observed on site.
		v	#	Corymbia maculata	Spotted Gum	Native distribution only in Tara Range, south of Buchan, Vic. Otherwise, widely planted in urban environment as an ornamental species {Walsh, 1999 #2869`, p. 953}.	2014	6	Low	Not observed; if it were present, it is highly likely to have been observed on site.
VU	L	v		*Glycine latrobeana*	Clover Glycine	Widespread, infrequent populations in southern Victoria {Walsh, 1996 #2868}. It occurs mainly in grassland and grassy woodland habitats, less often in dry forests, and only rarely in heathland. Populations occur from sea level to c. 1,200 m altitude (900 m in Tasmania). In Victoria, plants grow in a range of soil types including alluvial soils, and those derived from sandstones, mudstones, granite and basalt. Soils are usually clay, but may also have high loam content {Carter, 2010 #11344}.	2011	12	Low - Moderate	Habitat has been subject to ongoing mowing which reduces potential that the species would occur within the site despite the number of local records
		r		*Goodia medicaginea*	Western Golden-tip	Favouring drier habitat to Goodia lotifolia this species has a distribution in dry sclerophyll forest throughout south-western (i.e. north of Portland/Mt Arapiles), central (Eaglehawk/Killawarra Forest), north-eastern Victoria (Suggan Buggan), also west of Melbourne at Long Forest {Walsh, 1996 #2868}.	1901	1	Low	Single record is old

EPBC	FFG	VROT	Origin	Scientific name	Common name	Habitat/species notes	Last record	No. individuals	Likelihood occurrence	Likelihood Reasoning
		A*	#	*Grevillea rosmarinifolia*	Rosemary Grevillea	Includes two subspecies Grevillea rosmarinifolia subsp. glabella and Grevillea rosmarinifolia subsp. rosmarinifolia both listed as rare. Varies from medium shrub to near prostrate in size. Occurs in dry sclerophyll forest and plains grassland on basaltic soils through north and central Victoria and in western Victoria on sandy soils in mallee or shrub associations. The species is currently under review {Bull, 2014 #11220} {Walsh, 1996 #2868} {Udovicic, 2014 #11349}.	2007	12	Low - Moderate	Habitat has been managed for a period of time through moving and garden maintenance; this reduces the potential that the species would occur within the site despite the number of local records
		r		*Levenhookia sonderi*	Slender Stylewort	Distributed mainly in south-western Victoria but also occurs in central Victoria (Rushworth) and south-central Victoria (Beaconsfield); grows in seasonally damp ground and in drying swamps in lowland areas {Walsh, 1999 #2869}.	2011	5	Low	No dam or swamp present on site
		r	#	*Melaleuca armillaris subsp. armillaris*	Giant Honey-myrtle	Mostly confined to near-coastal sandy heath, scrub on slightly raised saltmarsh, riparian scrub, foothill outcrops, and rocky coastlines. Mainly distributed (native) east of Marlo, Vic., but regularly naturalizes in areas where planted {Walsh, 1996 #2868 `, p. 1031}.	2019	12	Low	If present on site or in local area, specimens would be planted or regenerated from planted specimens as species does not naturally occur within the local area and is native to Gippsland
CR	L	e		*Pomaderris vacciniifolia*	Round-leaf Pomaderris	Endemic to Victoria; a limited distribution within the upper catchment of the Yarra, Plenty and Yea Rivers, growing in moist forest and scrub {Walsh, 1999 #2869}.	2011	2	Low	Site is modified and not likely to support this species which is known to occur in other areas, such as Christmas Hills

EPBC	FFG	VROT	Origin	Scientific name	Common name	Habitat/species notes	Last record	No. individuals	Likelihood occurrence	Likelihood Reasoning
		v		*Pterostylis X toveyana*	Mentone Greenhood	Occurs in Victoria in the Midlands and Gippsland Plain. Grows in moist areas of open forest and in coastal scrub, flowers May to August. A natural Hybrid of P. concinna and P. Alata forming clonal colonies, usually in close proximity to the parents {Walsh, 1994 #2867`, p. 807}.	1931	2	Low	Suitable habitat, however is modified and is subject to periodic moving; records are also very old
EN	L	e		*Caladenia orientalis*	Eastern Spider-orchid	Distribution limited to coastal South Gippsland, between Mornington Peninsula and Wilsons Promontory. Grows mainly in heath or heathy woodland {Walsh, 1994 #2867`, p. 789;Jeanes, 2006 #5964}.	1978	1	Low	Not suitable habitat on site. Furthermore, it is unlikely this specie survives on site given the intense mowing regime
EN	L	e		*Caladenia rosella*	Little Pink Spider-orchid	Very restricted distribution, on the north-eastern outskirts of Melbourne, in box-ironbark woodland, on well-drained, skeletal soil; flowers July to September {Australian Plants Society Maroondah, 2001 #1198;Walsh, 1994 #2867`, pp. 792-93;Jeanes, 2006 #5964}.	2010	4	Low	Not suitable habitat on site. Furthermore, it is unlikely this specie survives on site given the intense mowing regime
		v		*Caladenia oenochila*	Wine-lipped Spider-orchid	Moist, well-drained soils in low hills and damp foothill and valley sclerophyll forests; often in shaded or grassy areas, and less commonly in heathy woodland. Flowers August to October. {Walsh, 1994 #2867`, p. 791;Jeanes, 2006 #5964;Australian Plants Society Maroondah, 2001 #1198}.	2011	13	Low	Not suitable habitat on site. Furthermore, it is unlikely this specie survives on site given the intense mowing regime
EN	L	e		*Caladenia amoena*	Charming Spider-orchid	Confined to poorer quality dry soil ridges in dry sclerophyll (particularly box-ironbark) forests fringing north-eastern Melbourne {Walsh, 1994 #2867`, p. 775;Australian Plants Society Maroondah, 2001 #1198;Jeanes, 2006 #5964}.	1988	1	Low	Single record is old. Furthermore, it is unlikely this specie survives on site given the intense mowing regime

EPBC	FFG	VROT	Origin	Scientific name	Common name	Habitat/species notes	Last record	No. individuals	Likelihood occurrence	Likelihood Reasoning
		r		*Pterostylis smaragdyna*	Emerald-lip Greenhood	Victorian endemic with a widespread, but patchy distribution. Grows in dry forests and woodlands on foothills from north-eastern to western Victoria {Jeanes, 2006 #5964}.	2011	13	Low	Not suitable habitat on site. Furthermore, it is unlikely this specie survives on site given the intense mowing regime
		r		*Billardiera scandens s.s.*	Velvet Apple-berry	Common in well-drained, dry to moist soils, particularly heathland, woodland and forests from near-sea level to sub-alpine regions {Walsh, 1996 #2868`, p. 531;Australian Plants Society Maroondah, 2001 #1198}.	2017	25	Medium	The surrounding area where remnant bushland occurs is likely to support this species; the Study Site is however quite modified and has been subject to ongoing mowing reducing its potential to occur on site; species was not observed on site.
		k		*Desmodium varians*	Slender Tick-trefoil	An uncommon species mostly from inland parts of Eastern Victoria where found mainly in woodland and open-forest {Walsh, 1996 #2868}.	2011	6	Low - Moderate	Site is modified and not likely to support this species which is known to occur in other areas, such as Christmas Hills
	R	v		*Eucalyptus leucoxylon subsp. connata*	Melbourne Yellow-gum	Generally found in well-watered areas with deep soil, or on stony hills {Walsh, 1996 #2868`, pp. 991-93}	2014	13	Low	Yellow Gum was not observed on site as part of this assessment or in the Arboriculatal Assessment completed by Stem Arboriculture.
		r	#	*Eucalyptus globulus subsp. globulus*	Southern Blue-gum	This subspecies of E. globulus is thought to only occur south of the Strzelecki Ranges, e.g. Port Franklin/Wilsons Promontory, and possibly intergraded spp. in Otway's and elsewhere in S. Gippsland {Walsh, 1996 #2868`, pp. 973-74}.	2010	1	Low	Not observed; if it were present, it is highly likely to have been observed on site.

EPBC	FFG	VROT	Origin	Scientific name	Common name	Habitat/species notes	Last record	No. individuals	Likelihood occurrence	Likelihood Reasoning
		v		*Caladenia reticulata s.s.*	Veined Spider-orchid	Confined to a small area of Western Victoria, near Stawell. Grows in box ironbark forest {Jeanes, 2006 #5964}.	1932	1	Low	Record is old and the habitat is not suitable. Furthermore, it is unlikely this specie survives on site given the intense mowing regime
VU	L	v		*Pterostylis chlorogramma*	Green-striped Greenhood	Apparently localized in Victoria, but exact range uncertain due to confusion with closely allied species. Grows in moist areas of heathy and shrubby forest, on well-drained soils. Flowers Jul.-Sep. {Walsh, 1994 #2867}	1995	8	Low	Records are old. Furthermore, it is unlikely this specie survives on site given the intense mowing regime
		k		*Olearia ramulosa var. tomentosa*	Downy Daisy-bush	Widespread through rocky ranges from the Grampians to east to the NSW border. Flowers mostly October to February {Walsh, 1999 #2869}.	2010	1	Low	Not observed; if it were present, it is highly likely to have been observed on site as the visit occurred during the flowering season.
		r		*Pterostylis sp. aff. plumosa (Woodland)*	Woodland Plume-orchid	Grows in dry woodland and foothill forest with a distribution from the north-eastern outskirts of Melbourne to western Victoria; flowers September to November {Jeanes, 2006 #5964}. Requires moist well drained soils {Bull, 2014 #11220}.	2011	1	Low	The habitat is not suitable. Furthermore, it is unlikely this specie survives on site given the intense mowing regime
		r		*Austrostipa rudis subsp. australis*	Veined Spear-grass	Uncommon with scattered populations across southern Victoria. Mostly in cool areas of moderate altitude, in dry open forest, or low grassy forest on sandy or sandstone-derived soil {Walsh, 1994 #2867`, p. 396;Australian Plants Society Maroondah, 2001 #1198}.	2011	5	Low - medium	Site has been subject to periodic mowing, with the main native grasses observed being Wallaby Grass and Weeping Grass; no Spear Grass was observed on site during the site assessment

EPBC	FFG	VROT	Origin	Scientific name	Common name	Habitat/species notes	Last record	No. individuals	Likelihood occurrence	Likelihood Reasoning
		v		*Cardamine papillata*	Forest Bitter-cress	Hilly forests across Victoria; flowers late winter spring {Walsh, 1996 #2868`, pp. 440-41}.	2011	1	Low	Modification of the understorey through ongoing mowing has modified the undertorey such that species including Weeping Grass and Wallaby Grass predominate as the main native vegetation component; the prospect of this species being present in the undertorey based on its modification is therefore reduced; there is also only one record for this species
EN	L	e		*Dianella amoena*	Matted Flax-lily	This plant is known to occur in lowland grasslands, grassy woodlands and grassy wetlands. It ranges from well drained to seasonally wet soils {DSE, 2006 #8547}.	2014	11	Low - Medium	While there are numerous records for this species in the local area; modification of the understorey through ongoing moving has reduced its potential to occur within the Study Site; no Dianella was recorded on site during the site assessment
		e		Eucalyptus X studleyensis	Studley Park Gum	A naturally occurring hybrid (E. ovata × E. camaldulensis) found in Studley Park/Yarra Bend and along the Yarra Valley {Australian Plants Society Maroondah, 2001 #1198}.	1998	8	Low	Not observed; if it were present, it is highly likely to have been observed on site; species was not recorded by arborist

EPBC	FFG	VROT	Origin	Scientific name	Common name	Habitat/species notes	Last record	No. individuals	Likelihood occurrence	Likelihood Reasoning
		v		Geranium solanderi var. solanderi s.s.	Austral Crane's-bill	An uncommon species of damp to dryish usually sheltered sites in grassy woodlands. Often along drainage line or in seepage areas {Walsh, 1999 #2869`, p. 224}.	1905	1	Low	Single record is old
		k		Geranium sp. aff. retrorsum (Nillumbik)	Valley Crane's-bill	Geranium sp. aff. retrorsum (Nillumbik) is a synonym for Geranium retrorsum s.s. It has been recorded rarely from the Warrandyte and Greensborough areas although distribution information is otherwise limited. Some Valley Grassy Forest areas may support this species. Given its inclusion in a broad circumscription, the poorly known conservation status does not warrant further consideration for planning purposes.	2008	2	Low	Records are 12 years old and are not in the vicinity of the site
		v		Dianella longifolia var. grandis	Flax Lily	Occurs in lowland plains grassland and grassy woodlands (e.g. Volcanic Plains and Riverina) as well as around rocky outcrops at higher altitudes than the var. longifolia (e.g. between Swifts Creek an Omeo, Benambra-Corryong district, Don River near Launching Place). Overall rather rare in the State {Walsh, 1994 #2867}.	2011	1	Low	Habitat not suitable. Furthermore, it is unlikely this specie survives on site given the intense mowing regime

EPBC	FFG	VROT	Origin	Scientific name	Common name	Habitat/species notes	Last record	No. individuals	Likelihood occurrence	Likelihood Reasoning
		k		Geranium aff. sp. 3	Rosella Crane's-bill	An undescribed species, with the manuscript name G. pallidiflorum ssp. roseum (Lynlee Smith in prep). It is known only from Greater Melbourne, with most records north-east of Melbourne. These occurrences are generally in foothill forests on exposed slopes of Silurian sedimentary geologies but also known to occur in protected situations such as under dense Burgan (Cam Beardsell pers. comm.)	2008	2	Low	Habitat not suitable
		e		Pterostylis sp. aff. striata (Silurian)	Silurian Striped Greenhood	An undescribed species with its closest affinities to Pterostylis striata. Associated trees: Eucalyptus goniocalyx s.l., Eucalyptus macrorhyncha, Eucalyptus melliodora, Eucalyptus polyanthemos, Eucalyptus goniocalyx s.s., Eucalyptus radiata subsp. radiata {DSE, 2009 #5923}. Endemic in north-eastern Melbourne where it occurs in lowland box-stringybark and box-ironbark woodland between Greensborough, research, Cottles Bridge and Yarrambat. It occurs on hill crests and river spurs (Cam Beardsell pers. comm.).	2011	3	Low	Modification of the understorey through ongoing mowing has modified the understorey such that species including Weeping Grass and Wallaby Grass predominate as the main native vegetation component; the prospect of this species being present in the understorey based on its modification is therefore reduced

EPBC	FFG	VROT	Origin	Scientific name	Common name	Habitat/species notes	Last record	No. individuals	Likelihood occurrence	Likelihood Reasoning
		k		Austrostipa verticillata	Bamboo Spear-grass	While the Wodonga specimen has been regarded as a potentially natural occurrence, its appearance only after rehabilitation of previously cleared site suggests the seed was inadvertently introduced. The plants at Devenish were collected from formerly irrigated pasture with no indigenous species present. The species is occasionally grown for ornament and, as at the other Victorian sites, is known to spread beyond cultivation. An occurrence along a rail line in Thurgoona, N.S.W., very near the Wodonga one, is suspected of also being an introduction. These sites are some hundreds of kilometres from known natural occurrences of the species.	2010	1	Low	No rehabilitation occurred on this site
		k		Kunzea leptospermoides	Yarra Burgan	Occurs in dry to damp forest and also riparian areas {Bull, 2014 #11220}. Previously was included within Kunzea ericoides and a full treatment of this complex and associated distribution is yet to be undertaken {Royal Botanic Gardens Victoria, 2016 #11851}.	2018	4	Low - medium	Kunzea ericoides was observed on site. The habitat could be suitable. However,the site is modified and less likely to provide habitat for this species.

Appendix 3. Potentially occurring rare or threatened fauna species

International Treaty
B: Bonn Convention; C: CAMBA; J: JAMBA; R: ROKAMBA.
EPBC Act 1999 conservation status
EX: Extinct, CR: Critically endangered, EN: Endangered, VU: Vulnerable and CD: Conservation dependant.

FFG Act 1988 status
L: Listed, N: Nominated, I: Invalid or ineligible, R: Rejected, D: Delisted
Victorian Rare or Threatened Species (VROTS) (DSE 2013)
ex: Extinct, rx: Regionally Extinct, wx: Extinct in the Wild, cr: Critically Endangered, en: Endangered, vu: Vulnerable, nt: Near Threatened, dd: Data Deficient

Treaty	EPBC	FFG	VROTS	Scientific name	Common name	Habitat/species notes	Last record	No. individuals	Likelihood occurrence	Likelihood Reasoning
	VU	L	v	*Prototroctes maraena*	Australian Grayling	This species only spends part of its life in freshwater streams, Australian Graylings migrate between freshwater streams and the ocean. Streams where this species occur tend to be clear with gravel bottoms and a variety of instream habitat such as pools and riffles. The upstream migration of this species has been effectively terminated in some rivers by dams {Allen, 2002 #5968}.	1760	2	Nil	No suitable habitat present
	VU	L	v	*Maccullochella peelii*	Murray Cod	The Murray Cod lives in a wide variety of habitats from silty slow moving rivers to clear rivers with pools and riffles. This fish prefers instream habitat of rocks and logs with over-hanging vegetation {Allen, 2002 #5968}.	2015	18	Nil	No suitable habitat present
		R	nt	*Macquaria ambigua*	Golden Perch	Occurs in a variety of riverine habitats, but prefers warm, slow-moving, turbid sections of streams. Also found in flooded lakes, backwaters and impoundments. Tolerant of temperatures between 4° and 35°C and high salinity levels (up to 35 p.p.t) {Allen, 2002 #5968`, p. 199}.	2008	1	Nil	No suitable habitat present

Treaty	EPBC	FFG	VROTS	Scientific name	Common name	Habitat/species notes	Last record	No. individuals	Likelihood occurrence	Likelihood Reasoning
	EN	L	e	*Macquaria australasica*	Macquarie Perch	The Macquarie Perch is found in the Murray River and its tributaries and is also found in parts of the Yarra River. It is most often found as a solitary individual, however can form schools during breeding season. The Macquarie Perch is more commonly found in slow moving rivers, reservoirs and lakes {Allen, 2002 #5968}.	2015	26	Nil	No suitable habitat present
		R		*Macquaria novemaculeata*	Australian Bass	Although spending most of their lives in freshwater rivers and streams, Australian Bass migrate downstream each year to spawn in estuaries.	2011	1	Nil	No suitable habitat present
		L	e	*Chelodina expansa*	Broad-shelled Turtle	Silty rivers, streams and waterholes {Wilson, 2008 #5486}. It occurs broadly through the inland river and billabongs of South eastern Australia. The species is cryptic in habit, yet occupies waters heavily exploited by humans {Bower S Hodges K, 2014 #33}.	1992	2	Nil - Low	No recent records. The site is approximately 100 m upslope away from the nearest watercourse. However, it is possible that the species could occasionally occur while on passage overland
			dd	*Chelodina longicollis*	Common Long-necked Turtle	Distributed throughout south eastern Australia including coastal rivers of Victoria. Occurs in a broad range of habitats including permanent riverine waterholes, lakes, farm dams and shallow temporary ponds. Found in greatest abundance in shallow, ephemeral waterholes or in bodies of water that are remote from remnant rivers, often in the absence of other turtle species. Able to distribute overland {Kennet, 2009 #11099}.	2016	27	Low	No recent records. The site is approximately 100 m upslope away from the nearest watercourse. However, it is possible that the species could occasionally occur while on passage overland. This species is known to often travel 1-2 km overland

Treaty	EPBC	FFG	VROTS	Scientific name	Common name	Habitat/species notes	Last record	No. individuals	Likelihood occurrence	Likelihood Reasoning
			v	*Emydura macquarii*	Murray River Turtle	Dependent on permanent and stable water levels. They are omnivorous scavengers and grazers, and feed off aquatic plants and vertebrate carrion. They are able to scrape periphyton from submerged logs. This tells us that their preferred general habitat is permanent, relatively calm water with a good supply of underwater snags. Female turtles prefer to deposit their eggs above high water level (Goodwin and Hopkins 2005)	2015	3	Nil – Low	While there are some recent local records, the site is approximately 100 m upslope away from the nearest watercourse. It is possible that the species could occasionally occur while on passage overland

Treaty	EPBC	FFG	VROTS	Scientific name	Common name	Habitat/species notes	Last record	No. individuals	Likelihood occurrence	Likelihood Reasoning
				Ornithorhynchus anatinus	Platypus	Platypuses occur in freshwater systems from tropical rainforest lowlands and plateaus of far northern Queensland to cold, high altitudes of Tasmania and the Australian Alps. They feed in both slow-moving and rapid (riffle) parts of streams, but show preference to coarser bottom substrates, particularly cobbles and gravel. When not foraging, the Platypus spends most of the time in its burrow in the bank of the river, creek or a pond. At times, the individuals use rocky crevices and stream debris as shelters, or they burrow under the roots of vegetation near the stream. Hence, the ideal habitat for the species includes a river or a stream with earth banks and native vegetation that provides shading of the stream and cover near the bank. The presence of logs, twigs, and roots, as well as cobbled or gravel water substrate result in increased microinvertebrate fauna (a main food source), and the Platypus also tends to be more abundant in areas with pool-riffle sequences.	2017	97	Nil - Low	While there are many records, including recently, the site is approximately 100m upslope away from the nearest watercourse, and has no suitable habitat. It is very unlikely this species would traverse the site.
			nt	*Dromaius novaehollandiae*	Emu	Found in plains, scrublands, open woodlands, coastal heaths, alpine pastures, semi-deserts, margins of lakes, pastoral and cereal growing areas. Mostly absent from closely settled parts, common in pastoral and cropping regions, state forests and national parks {Pizzey, 2007 #4773}	2017	1	Nil - Low	Only one record. Although this is recent record, the vicinity of the site is strongly urbanised or being developed, and it is unlikely the species would occur on site

Treaty	EPBC	FFG	VROTS	Scientific name	Common name	Habitat/species notes	Last record	No. individuals	Likelihood occurrence	Likelihood Reasoning
	CR	L	ce	*Pedionomus torquatus*	Plains-wanderer	Main distribution is within the Riverina of NSW, patchy elsewhere, and only occurring in small numbers in northern Victoria. Inhabits open grasslands with preference towards Danthonia and Stipa species. However, vegetation structure is more important than floristic composition. Does not occur in dense grasslands and woodlands {Marchant, 1993 #703;Pizzey, 2007 #4773}.	1997	1	Nil - Low	Only one record, likely to be a vagrant. Species is currently largely limited in distribution, and habitat on site is not suitable
		L	v	*Lewinia pectoralis*	Lewin's Rail	Inhabits densely vegetated, fresh, brackish or saline wetlands, usually with areas of standing water. Use long tussocky grass, reeds, rushes, sedges or bracken and are occasionally found amongst tangled clumps of weeds such as Blackberries and Lantana {Marchant, 1993 #703}.	1995	5	Nil - Low	Limited to no suitable habitat present. May occur on passage.
		L	v	*Porzana pusilla*	Baillon's Crake	This species returns to northern Victoria in spring, but there are few details on migration. It inhabits freshwater wetlands and floodwaters usually containing floating plants or tall emergent vegetation. The Baillon's Crake feeds in shallow water, mud and emergent aquatic plants. It has been found to nest in clumps or tussocks of vegetation surrounded by water {Marchant, 1993 #703;Pizzey, 2007 #4773}.	1991	3	Nil - Low	Limited to no suitable habitat present. May occur on passage.

Treaty	EPBC	FFG	VROTS	Scientific name	Common name	Habitat/species notes	Last record	No. individuals	Likelihood occurrence	Likelihood Reasoning
			nt	*Phalacrocorax varius*	Pied Cormorant	This species is most often found along the coast, however are known to use inland wetlands including billabongs, deep and open swamps and rivers (large freshwater and saline wetlands). They nest in colonies, building platforms nests in mangroves or other trees {Marchant, 1990 #5613;Pizzey, 2007 #4773}.	2018	5	Nil - Low	Limited to no suitable habitat present. May occur on passage.
BONNA2H, ROKAMBA, JAMBA, CAMBA			nt	*Gallinago hardwickii*	Latham's Snipe	Latham's Snipe is a migratory species. The species migrates to Victoria from breeding grounds in Japan. In Victoria this species is widely distributed in a range of habits including heavily vegetated freshwater swamps, and pools or ditches in heaths or subalpine herblands {Pizzey, 2007 #4773}. Also occurs in small ephemeral wetlands such as wet depressions after floods recede. Generally roosts in thick vegetation during the day, sometimes under shrubs away from wetlands, and will feed in swamps at night. They are occasionally seen feeding during the day. This species feeds by probing in soft mud and rarely moves far from concealing vegetation {Higgins, 1996 #5972}.	2019	20	Nil - Low	Limited to no suitable habitat present. May occur on passage.

Treaty	EPBC	FFG	VROTS	Scientific name	Common name	Habitat/species notes	Last record	No. individuals	Likelihood occurrence	Likelihood Reasoning
			nt	*Platalea regia*	Royal Spoonbill	The Royal Spoonbill inhabits the shallow parts of fresh and saline wetlands, these birds are gregarious in small flocks. They are mostly common on intertidal mudflats in coastal bays. Their stick-nests are built in reeds, shrubs or trees, singly or in loose colonies and are often seen with other species {Marchant, 1990 #5613}.	2019	3	Nil - Low	No suitable habitat present. May occur on passage.
		L	e	*Egretta garzetta*	Little Egret	Inhabits terrestrial wetlands and shallow margins of tidal estuaries and inland lakes and rivers. Feed in shallow water and nest colonially, often with other waterbirds. Stick-nests are usually built in trees over water, although occasionally in reedbeds {Marchant, 1990 #5613}.	2000	3	Nil - Low	No suitable habitat present. May occur on passage.
		L	e	*Ardea intermedia plumifera*	Plumed Egret	Mostly a denizen of the shallows in terrestrial wetlands, the Intermediate Egret prefers freshwater swamps, billabongs, floodplains and wet grasslands with dense aquatic vegetation, and is only occasionally seen in estuarine or intertidal habitats.	2018	5	Nil - Low	No suitable habitat present. May occur on passage.

Treaty	EPBC	FFG	VROTS	Scientific name	Common name	Habitat/species notes	Last record	No. individuals	Likelihood occurrence	Likelihood Reasoning
			nt	*Nycticorax caledonicus*	Nankeen Night Heron	The Nankeen Night Heron has a widespread distribution in wetlands throughout Australia, particularly in the north, south, and southwest. This species inhabits shorelines of lakes, rivers, estuaries, terrestrial wetlands and grasslands, particularly those sheltered by tall ground vegetation and/or trees, with shallow, slow-moving water. Breeds in colonies, usually in the crown or canopy of trees, in forks or on horizontal boughs; also in reed beds or atop shrubs. In Victoria, most numerous in the Murray River region, and in smaller numbers in more coastal/near-coastal regions {Marchant, 1990 #5613;Pizzey, 2007 #4773}.	2018	30	Nil - Low	No suitable habitat present. May occur on passage.
		L	e	*Ixobrychus dubius*	Little Bittern	Occurs mainly in dense emergent vegetation in freshwater swamps, lakes and watercourses, where forage in shallow water or from supporting emergent or aquatic vegetation over deep water. Tolerates brackish-saline waters in mangrove swamps, Juncus-dominated saltmarsh, and wooded margins of coastal lagoons. Nests in densely vegetated freshwater wetlands, invariably over water, in sedge, reeds or rush, either in pure stands or interspersed in woodland thickets. Most records from the Murray-Darling Basin {Marchant, 1990 #5613`, p. 1040}.	1991	1	Nil - Low	No suitable habitat present. May occur on passage.

Treaty	EPBC	FFG	VROTS	Scientific name	Common name	Habitat/species notes	Last record	No. individuals	Likelihood occurrence	Likelihood Reasoning
	EN	L	e	*Botaurus poiciloptilus*	Australasian Bittern	This species is part nocturnal and forages over water in dense cover, sometimes from platforms in wetland vegetation. Habitat is usually tall reedbeds, sedges, rushes, cumbungi or lignum. Also occurs on rice fields, drains in tussocky paddocks and occasionally on saltmarshes and brackish wetlands. Nests are shallow saucers on trampled water plants {Pizzey, 2007 #4773}.	1950	1	Nil - Low	No suitable habitat present. May occur on passage.
			v	*Spatula rhynchotis*	Australasian Shoveler	The Australasian Shoveler occurs mainly on large, well-vegetated wetlands and lakes, occasionally including areas with saline waters. Populations are found in higher numbers on permanent, well-vegetated freshwater swamps with areas of open water. This species nests in grass nests on the ground, usually in dense cover and near water {Pizzey, 2007 #4773;Marchant, 1990 #5613}.	2010	17	Nil - Low	No suitable habitat present. May occur on passage.

Treaty	EPBC	FFG	VROTS	Scientific name	Common name	Habitat/species notes	Last record	No. individuals	Likelihood occurrence	Likelihood Reasoning
			v	*Aythya australis*	Hardhead	Hardheads inhabit deep to shallow wetlands with open water and fringing emergent vegetation {Pizzey, 2007 #4773}. The species feeds by diving in deep water and occasionally by dabbling just under the water surface {Rogers, 1990 #10620}. Nests are built in thick vegetation (e.g. reeds, lignum, cumbungi), usually over water {Halse, 2005 #5978;Rogers, 1990 #10620}. These birds are most common in the wetland systems of inland Australia {Halse, 2005 #5978}. Birds do visit Victoria from these areas in spring and summer, returning as the northern wetlands are replenished by rain {Halse, 2005 #5978}. However, some birds are present in Victoria all year round depending on the suitability of the wetland {Pizzey, 2007 #4773}.	2019	24	Nil - Low	No suitable habitat present. May occur on passage.
			v	*Biziura lobata*	Musk Duck	Usually seen in small numbers on the deep waters of well-vegetated fresh to saline lakes, swamps and occasionally shallow inlets and bays. Nests are formed in low vegetation in areas sheltered by surrounding vegetation {Marchant, 1990 #5613;Pizzey, 2007 #4773}.	1991	1	Nil - Low	No suitable habitat present. May occur on passage.

Treaty	EPBC	FFG	VROTS	Scientific name	Common name	Habitat/species notes	Last record	No. individuals	Likelihood occurrence	Likelihood Reasoning
		L	v	*Accipiter novaehollandiae*	Grey Goshawk	The Grey Goshawk has a stronghold in Victoria; particularly the white form in the Otway Ranges, where wet forests and gullies containing Mountain Grey Gum adjoin partly cleared farmlands. They occur in lower densities in similar habitats in the Strzelecki Ranges, Gippsland Plains and Otway Plains. Elsewhere in the State they are occasionally seen in woodlands, dry forests, suburban parks and wooded farmlands {Marchant, 1993 #703}.	2018	4	Low	Limited suitable habitat present. Only a few records. Species may occur while on passage or during foraging, but is unlikely to make significant use of the site.
CAMBA		L	v	*Haliaeetus leucogaster*	White-bellied Sea-Eagle	Occurs along the coast (especially the forested coasts of the East Gippsland Plains), on coastal islands, around coastal lakes and along some inland rivers and lakes. Catches prey on, or near the water's surface and also takes refuse from fishing boats. On land they feed from the ground on carrion or occasionally catch live prey. Builds stick-nests in tall eucalypts, particularly River Red Gum, Forest Red Gum and Southern Mahogany. Clearing of forests and woodlands along the coast, near coastal lakes, and along the Murray River, threatens this species. In the Gippsland Lakes region more than half of the known nest sites are on private lands {DSE, 2003 #4987}. Occurs across a range of forests and woodlands throughout Victoria {DSE, 2003 #4987}.	2018	1	Low	Limited to no suitable habitat present. Only a single record. Species may occur while on passage, but is very unlikely to make significant use of the site.

Treaty	EPBC	FFG	VROTS	Scientific name	Common name	Habitat/species notes	Last record	No. individuals	Likelihood occurrence	Likelihood Reasoning
		L	e	*Ninox connivens*	Barking Owl	Occurs in dry woodlands, wooded farmlands and dry forests in the 500-800mm annual rainfall zone and extend into semi-arid areas in River Red Gum forests along the Murray River. Hollow dependent species {Higgins, 1999 #5967;Pizzey, 2007 #4773}.	1997	4	Low	Only a few records, none recent, however, some suitable habitat is present, and species could potentially still occur.
		L	v	*Ninox strenua*	Powerful Owl	Widespread in foothill and coastal forests where they especially favour gullies with Peppermint-Manna Gum forests. Occasionally seen in wetter mountain forests, drier box-ironbark forests and woodlands, and softwood plantations. Hunts at night by flying through the forest canopy catching prey from tree branches. They nest in large holes in trees {DSE, 2004 #4990}.	2019	26	High	Many records, including recently. Species has a large home range and so is likely to occur at least occasionally during foraging.

Treaty	EPBC	FFG	VROTS	Scientific name	Common name	Habitat/species notes	Last record	No. individuals	Likelihood occurrence	Likelihood Reasoning
	VU	L	e	*Polytelis swainsonii*	Superb Parrot	Found only in the Upper Murray Valley, mainly in the riverine forests and woodlands of Barmah Forest in Victoria. All other sightings have been made along or within 10 km of the Murray, Ovens and Goulburn Rivers. Nests located in hollows of very large riparian trees in River Red Gum forests. Feeds mainly in Black Box, Grey Box and Yellow Box woodlands and wooded farmlands away from their nest-trees but also within the River Red Gum forests round their nest. All nests are within 10km of major feeding areas. Forages on the ground and occasionally in eucalypts and mistletoes. The loss in range of this species is attributed to clearing and grazing of woodland feeding habitats but laying of poison baits for rabbits and Galahs, illegal trapping for the avicultural trade and logging of nest-trees are other possible causes {Higgins, 1999 #5967`. pp. 287-295}.	1999	1	Low	Only one record, likely to be a vagrant, as site is outside the usual distribution range for the species. However, some suitable eucalypt habitat for foraging is present and the species could potentially occur while on passage.

Treaty	EPBC	FFG	VROTS	Scientific name	Common name	Habitat/species notes	Last record	No. individuals	Likelihood occurrence	Likelihood Reasoning
		L	nt	*Neophema pulchella*	Turquoise Parrot	Usually in native grassy forests and woodlands composed of mixed assemblages of a variety of Eucalyptus species. Often in farmland, mainly pasture with remnant trees, living or dead, or tree stumps. Nest in hollow-bearing trees either dead or alive, also in hollows in tree stumps, fallen logs and fence posts. Recorded in East Gippsland and Northern and North-East districts of Victoria. Individuals have been recorded in Western Port Bay (1982) and French Island (1997) {Higgins, 1999 #5967`, pp. 574-75}.	1999	1	Low	Only one record, likely to be a vagrant, as site is outside the usual distribution range for the species. However, some suitable eucalypt habitat for foraging is present and the species could potentially occur while on passage.

Treaty	EPBC	FFG	VROTS	Scientific name	Common name	Habitat/species notes	Last record	No. individuals	Likelihood occurrence	Likelihood Reasoning
	CR	L	e	*Lathamus discolor*	Swift Parrot	The Swift Parrot is a winter migrant to Victoria {Swift Parrot Recovery Team, 2001 #4502}. They arrive from their breeding areas in Tasmania, however small numbers of non-breeding birds may remain here during summer {Swift Parrot Recovery Team, 2001 #4502;Higgins, 1999 #5967}. They are nomadic, and follow the flowering of trees and psyllid infestations. In Victoria their distribution is centered on box-ironbark forests, but they are often seen in town parks and occur sporadically elsewhere in dry forests, dry woodlands and wooded farmlands. They are seldom seen in treeless areas, rainforests or wet forests {Higgins, 1999 #5967;Pizzey, 2007 #4773}. Feed mainly in winter-flowering plants, especially Red Ironbarks and ornamental trees and shrubs {Swift Parrot Recovery Team, 2001 #4502;Higgins, 1999 #5967}.	2019	83	High	Many records, including recently. Species is migratory and partially nomadic, following eucalypt flowering events, so is likely to occur at least occasionally, particularly as favoured eucalypt species are present on site.
			nt	Alcedo azurea	Azure Kingfisher	This species is usually found near well-vegetated wetlands. Uses root-festooned banks of fresh or tidal creeks, rivers, streams, lakes, swamps, estuaries or mangroves for perching. It forages by plunge-diving from perches to below surface of still or slow moving water, which may sometimes be only a few centimetres deep {Higgins, 1999 #5967}. Nesting occurs in small burrows in creek banks {Pizzey, 2007 #4773}.	2019	26	Low-Medium	Limited suitable habitat present. Species may occur while on passage, but is unlikely to make significant use of the site.

Treaty	EPBC	FFG	VROTS	Scientific name	Common name	Habitat/species notes	Last record	No. individuals	Likelihood occurrence	Likelihood Reasoning
CAMBA, ROKAMBA, JAMBA			v	*Hirundapus caudacutus*	White-throated Needletail	In Australia, the White-throated Needletail is almost exclusively aerial, from heights of less than 1 m up to more than 1000 m above the ground. Because they are aerial, it has been stated that conventional habitat descriptions are inapplicable. In Australia, White-throated Needletails almost always forage aerially, at heights up to 'cloud level', above a wide variety of habitats ranging from heavily treed forests to open habitats, such as farmland, heathland or mudflats {Higgins, 1999 #5967}.	2019	37	Medium	This species rarely lands and feeds on invertebrates 'on the wing'. This species could potentially feed over this site.
			nt	*Chrysococcyx osculans*	Black-eared Cuckoo	Summer migrants to Vic from northern wintering areas. Occur in mallee scrubs, dry woodlands and box-ironbark forests, mainly north of the Great Divide. They feed in low shrubs and from open ground among trees; they lay their eggs in the nests of other birds. Occasional or irregular visitors south of the Great Divide {Higgins, 1999 #5967}.	1991	1	Low	There is limited suitable habitat present. Site is also well outside the normal distribution range for the species, which may occur as a vagrant.

Treaty	EPBC	FFG	VROTS	Scientific name	Common name	Habitat/species notes	Last record	No. individuals	Likelihood occurrence	Likelihood Reasoning
		L	nt	*Melanodryas cucullata*	Hooded Robin	Highest density in semi-arid NW. Victoria where they inhabit mallee scrubs, cypress pine woodlands, mallee heaths with scattered trees and box-ironbarks forests. Uncommon in southern Vic where they occur in a range of lightly timbered habitats containing tall shrubs. These include Box woodlands, coastal heaths and heathy woodlands. Forage on bare ground, using vantage points such as dead limbs or fence posts to detect prey {Marchant, 1993 #703; Pizzey, 2007 #4773}.	1992	1	Low	No recent records. There is limited suitable habitat present. Site is also well outside the normal distribution range for the species, which may occur as a vagrant.
		L	v	*Pyrrholaemus sagittatus*	Speckled Warbler	Mainly grassy ground layer of dry sclerophyll forests and woodlands, often with scattered shrubs in under-storey.Mainly found in forests dominated by eucalyptus, especially box-ironbark forests and woodlands e.g. near Chiltern, NE. Victoria. found near Bendigo recorded in red Stringybark, red box and long leaved box with a grassy ground layer and well-spaced shrubs in understorey, but not in red ironbark or yellow gum forests. Occasionally occur in mallee habitats, sometimes with native pine; in Victoria, mostly confined to N. foothills of great divide but scattered on S. slopes of great divide {Higgins, 2002 #8944}.	1991	7	Low	No recent records. There is limited suitable habitat present. Site is also well outside the normal distribution range for the species, which may occur as a vagrant.

Treaty	EPBC	FFG	VROTS	Scientific name	Common name	Habitat/species notes	Last record	No. individuals	Likelihood occurrence	Likelihood Reasoning
	CR	L	ce	*Anthochaera phrygia*	Regent Honeyeater	Its range has contracted dramatically from its historical distribution as the species has suffered badly from broad-scale clearing and complete absence of old growth box-ironbark habitat so that now only around 100 individuals remain wild in Victoria. It is a rare vagrant to the country around Bendigo (where it was once common) and to Gippsland (where it was a regular visitor), and in most years only a handful of birds are seen in eastern Victoria — four-fifths of sightings are from just three locations: Chiltern, the Killawarra, and the Reef Hills. It is highly nomadic in its movements as determined by the need for a nectar rich diet from the flowering of eucalypts particularly Mugga Ironbark Eucalyptus sideroxylon, White Box Eucalyptus albens, Yellow Box Eucalyptus melliodora and Yellow Gum Eucalyptus leucoxylon {SWIFFT, 2017 #11947}.	1989	16	Low	Several records, however, none recently. Species is migratory and partially nomadic, following eucalypt flowering events, but site is outside the usual distribution range and species is only likely to occur occasionally, as a vagrant. Note: there have been more records in Greater Melbourne in recent years.

Treaty	EPBC	FFG	VROTS	Scientific name	Common name	Habitat/species notes	Last record	No. individuals	Likelihood occurrence	Likelihood Reasoning
		L	v	*Phascogale tapoatafa*	Brush-tailed Phascogale	This species typically inhabits dry forest and woodland dominated by box, ironbark and stringybark eucalypts but may also occur in wetter forests {Menkhorst, 1996 #4963}. Prefers open forest with sparse groundcover, but uses habitats ranging from mallee to rainforest. The understorey and ground cover in these favoured habitats may be sparse, consisting of "scattered tussocks and forest litter" {Menkhorst, 1996 #4963}. Other characteristics of known habitat of this species include dead trees (favoured for foraging), availability of bark from the Red Stringybark (for nest material) {Menkhorst, 1996 #4963}, and a number of tree hollows with entrances as narrow as five centimetres or less (for nesting and shelter). Has disappeared from substantial areas of Victoria in recent times {Van Dyck, 2008 #5474}.	2010	3	Low - Medium	Only a few records, including quite recently. There is some suitable habitat present. The species has potential to occur, but is unlikely to be present in extensive numbers.
			v	*Sminthopsis murina murina*	Common Dunnart	Most commonly found in woodland, open forest and heathlands. Appears adapted to a mid-successional complex of vegetation and benefits from periodic burning of habitat. Local distribution is usually very patchy. Nocturnal and insectivorous {Van Dyck, 2008 #5474}.	1991	1	Low	Only one older record. Very limited to no suitable habitat present.

Treaty	EPBC	FFG	VROTS	Scientific name	Common name	Habitat/species notes	Last record	No. individuals	Likelihood occurrence	Likelihood Reasoning
	VU	L	v	*Pteropus poliocephalus*	Grey-headed Flying-fox	Eastern coastal Australia from Gladstone in Qld to South Gippsland and Melbourne in Vic, with rare influxes further west and south. Rarely more than 200km inland. In warmer months gathers in very large camps, usually in dense forest in gullies. Population is more dispersed in winter. Size of camps fluctuate in response to local food supplies. In south numbers fluctuate in regular pattern, being highest in late summer-autumn and lowest in winter {Menkhorst, 2001 #1259}.	2017	7	Medium	Some suitable habitat present, species is likely to occur at least occasionally, particularly while foraging, but is not likely to make significant use of the site.
			e	*Varanus varius*	Lace Monitor	Occurs in well-timbered areas, from dry woodlands to cool temperate southern forests. Species is arboreal, ascending large trees when disturbed; forages widely. Clutches of eggs are laid in arboreal or terrestrial termite mounds {Wilson, 2008 #5486}.	2016	1	Low	Only one, albeit, recent, record. The species is very uncommon in the Greater Melbourne area, and while some suitable habitat is present, the vicinity of the site is strongly urbanised or being developed and connectivity to larger areas of habitat reduces the likelihood of this species occuring within the site.
			v	*Pseudemoia rawlinsoni*	Glossy Grass Skink	Inhabits swamp and lake edges, salt-marshes and boggy creeks with dense vegetation {Wilson, 2008 #5486}.	1988	1	Nil	No suitable habitat present.

Treaty	EPBC	FFG	VROTS	Scientific name	Common name	Habitat/species notes	Last record	No. individuals	Likelihood occurrence	Likelihood Reasoning
		L	e	*Pseudophryne bibronii*	Brown Toadlet	Frequent dry forest, woodland, shrubland and grassland, sheltering under leaf-litter and other debris in moist soaks and depressions. Eggs are spawned in shallow burrows (or nets) under litter, in low areas, near water, that will later be flooded. Tadpoles are aquatic in ponds, flooded grassland and roadside ditches {Hero, 1991 #5583}.	1992	11	Nil - Low	No recent records, and no suitable habitat present
			v	*Pseudophryne semimarmorata*	Southern Toadlet	The Southern Toadlet can be found in dry forest, woodland, shrubland, grassland and heaths. It shelters under leaf litter and other debris in moist soaks and depressions. Their eggs are spawned in shallow burrows under organic litter in low areas close to water {Hero, 1991 #5583}.	2009	14	Nil - Low	No recent records, but no suitable habitat present

Treaty	EPBC	FFG	VROTS	Scientific name	Common name	Habitat/species notes	Last record	No. individuals	Likelihood occurrence	Likelihood Reasoning
	VU	L	e	*Litoria raniformis*	Growling Grass Frog	The species often inhabits water bodies with a diverse assemblage of aquatic vegetation, including emergent species such as sedges (Gahnia spp.), submergent species such as curly pondweed (Potamogeton spp.), floating species such as water ribbon (Triglochin spp.) and filamentous algae {Hamer, 2006 #5576;Heard, 2004 #6073}. The aquatic vegetation provides sites for male frogs to call from, sites for eggs to be deposited and relatively safe development, and food and shelter for tadpoles. Dense submergent vegetation is especially important to protect eggs and tadpoles from predation {Heard, 2004 #6073}. However, it is also known to occur in ditches, dams and swamps or sheltering under discarded debris near those sites {Tyler, 2009 #4699`, pp. 38-39}.	1998	8	Nil - Low	Habitat on site is not suitable (no waterbody). Records are old

Treaty	EPBC	FFG	VROTS	Scientific name	Common name	Habitat/species notes	Last record	No. individuals	Likelihood occurrence	Likelihood Reasoning
		L		*Miniopterus schreibersii GROUP*	Common Bent-wing Bat	Includes two subspecies: Miniopterus schreibersii bassanii and Miniopterus schreibersii oceanensis. Miniopterus schreibersii bassanii occurs in rainforest, wet and dry sclerophyll forest, monsoon forest, open woodland, Melaleuca forest and open grasslands. They are cave dwellers but also use man-made constructions such as abandoned mines and road culverts {Churchill, 2008 #3973`, p. 182}. Known breeding sites in Victoria largely occur west of Heywood, Portland, Hamilton and Warrnambool. The easternmost breeding site is at Pomborneit, near Camperdown. Also found foraging within woodlands near large natural wetlands, river basins and agricultural areas {Churchill, 2008 #3973`, p. 182}. Miniopterus schreibersii oceanensis occurs along the east coast of Australia from Cape York, N. Qld to Castlemaine, Vic, predominantly east of Great Dividing Range. Habitat is rainforest, wet and dry sclerophyll forest, monsoon forest, open woodland, Melaleuca forests and open grasslands. {Churchill, 2008 #3973`}.	1992	5	Low	Limited suitable habitat present. Records are old, however, microbats are not well-studied in general, and species could potentially occur, particularly while on passage or during foraging.

EN	L	e	*Paralucia pyrodiscus lucida*	Eltham Copper	This subspecies of the Dull Copper P. pyrodiscus is endemic to Victoria, with a very sparse, scattered distribution consisting of three general localities in Victoria: Eltham/Greensborough areas where about 10 sites exist across different tenure and management; Kiata and Salisbury areas in western Victoria, known from about 6 sites which includes Crown Land at Kiata and the Salisbury Bushland Reserve; Castlemaine & Bendigo areas: about 5 sites near Castlemaine within National Park, Botanic Gardens & State Forest and 6 sites near Bendigo within National Park and one on private land {SWIFFT, 2017 #11947}. It has an obligatory relationship with Notoncus spp. ants and the dwarfed form of Sweet Bursaria Bursaria spinosa. These discrete populations are found within sparse, dry woodland on well-drained gentle slopes with north to west aspects, particularly with Red Stringybark Eucalyptus macrorhyncha, Red Box E. polyanthemos, Long-leaved Box E. goniocalyx, and Late Black Wattle Acacia mearnsii and an understorey including Cherry Ballart Exocarpos cupressiformis, Hedge Wattle A. paradoxa, Drooping Cassinia Cassinia arcuata Shiny Cassinia C. longifolia, and Sweet Bursaria, and a groundcover including Small-leaf Clematis Clematis microphylla, Purple Coral-pea Hardenbergia violacea, and Common Flat-pea Platylobium	2017	96	Low-Medium	Species requires specific host plant species, and as some of these occur within the site. While populations have been recorded less than two kilometres away from the site (Wildlife Experiences 2019), the site is highly modified and the Sweet Bursaria on site are scattered. The site may have an occasional Eltham Copper Butterfly fly through but is unlikely to support breeding of the species.

Treaty	EPBC	FFG	VROTS	Scientific name	Common name	Habitat/species notes	Last record	No. individuals	Likelihood occurrence	Likelihood Reasoning
						obtusangulum amongst native grasses, mosses and leaf litter {DSE, 2003 #4984}.				
		L	e	*Tandanus tandanus*	Freshwater Catfish	Found in slow-moving streams lakes and ponds with fringing vegetation. More abundant in lakes than in flowing water. Widely distributed throughout the Murray-Darling River system, but numbers are now declining possibly due to introductions of carp (which have similar feeding habits) and/or degradation of suitable breeding habitat {Allen, 2002 #5968`, p. 88}.	1988	2	Nil	No suitable habitat present.
CAMBA, JAMBA		L	v	*Ardea alba*	Great Egret	Habitat includes terrestrial wetlands, estuarine, littoral and moist grass habitats. Forages in open, shallow water and generally avoids dry or deeply flooded areas. Breed in wetlands with fringing or flooded trees, or other tall vegetation in which nests are built. Are known to use mangroves along the coast. Roosts in trees or near wetlands {Marchant, 1990 #5613}.	2004	15	Nil - Low	No suitable habitat present. May occur on passage.

Appendix 4. Native vegetation removal report

Native vegetation removal report

A report to support an application to remove, destroy or lop native vegetation in the **Intermediate** Assessment Pathway using the modelled condition score

This report provides information to support an application to remove native vegetation in accordance with the *Guidelines for the removal, destruction or lopping of native vegetation*. The report is not an assessment by DELWP or local council of the proposed native vegetation removal. Biodiversity information and offset requirements have been calculated using modelled condition scores contained in the *Native vegetation condition map*.

Date and time: **12 March 2020 14:46 PM**

Lat./Long.: -37.7091758063514,145.134663865366

Native vegetation report ID: 356-20200312-010

Address:
24 WARRINGAH CRESCENT ELTHAM 3095
26 WARRINGAH CRESCENT ELTHAM 3095
4 COOLABINDI CHASE ELTHAM 3095
5 COOLABINDI CHASE ELTHAM 3095
30 WARRINGAH CRESCENT ELTHAM 3095
3 ST RONANS COURT ELTHAM 3095

Assessment pathway

The assessment pathway and reason for the assessment pathway

Assessment pathway	**Intermediate Assessment Pathway**
Extent of past plus proposed native vegetation removal	0.352 hectares
No. large trees	3 large tree(s)
Location category	Location 1 The native vegetation is not in an area mapped as an endangered Ecological Vegetation Class, sensitive wetland or coastal area. Removal of less than 0.5 hectares will not have a significant impact on any habitat for a rare or threatened species.

Offset requirement

The offset requirement that will apply if the native vegetation is approved to be removed

Offset type	General offset
Offset amount	0.066 general habitat units
Offset attributes	
Vicinity	Port Phillip And Westernport Catchment Management Authority (CMA) or Nillumbik Shire Council
Minimum strategic biodiversity value score	0.208
Large trees	3 large tree(s)

Biodiversity information about the native vegetation

Description of any past native vegetation removal

Any native vegetation that was approved to be removed, or was removed without the required approvals, on the same property or on contiguous land in the same ownership, in the five year period before the application to remove native vegetation is lodged is detailed below.

Permit/PIN number	Extent of native vegetation (hectares)
None entered	0 hectares

Description of the native vegetation proposed to be removed

Extent of all mapped native vegetation	0.352 hectares
Condition score of all mapped native vegetation	0.200
Strategic biodiversity value score of all mapped native vegetation	0.260
Extent of patches native vegetation	0.352 hectares
1	0.000 hectares
2	0.352 hectares
Extent of scattered trees	0 hectares
No. large trees within patches	3 large tree(s)
No. large scattered trees	0 large tree(s)
No. small scattered trees	0 small tree(s)

Additional information about trees to be removed, shown in Figure 1

Tree ID	Tree circumference (cm)	Benchmark circumference (cm)	Scattered / Patch	Tree size
A	220	220	Patch	Large
B	245	220	Patch	Large
C	226	220	Patch	Large

Other information

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

Photographs of the native vegetation to be removed
Recent, dated photographs of the native vegetation to be removed must be provided with the application. All photographs must be clear, show whether the vegetation is a patch of native vegetation or scattered trees, and identify any large trees. If the area of native vegetation to be removed is large, provide photos that are indicative of the native vegetation.

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

Topographical and land information

Description of the topographic and land information relating to the native vegetation to be removed, including any 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. This may be represented in a map or plan. **This is an application requirement and your application will be incomplete without it.**

Avoid and minimise statement

This statement describes what has been done to avoid the removal of, and minimise impacts on the biodiversity and other values of native vegetation. **This is an application requirement and your application will be incomplete without it.**

Defendable space statement

Where the removal of native vegetation is to create defendable 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 if your application also includes an application under the Bushfire Management Overlay.

Offset statement

An offset statement that demonstrates that an offset is available and describes how the required offset will be secured. **This is an application requirement and your application will be incomplete without it.**

Next steps

Applications to remove, destroy or lop native vegetation must address all the application requirements specified in *Guidelines for the removal, destruction or lopping of native vegetation.*If you wish to remove the mapped native vegetation you are required to apply for a permit from your local council. This *Native vegetation removal report*must be submitted with your application and meets most of the application requirements. The following needs to be added as applicable.

Property Vegetation Plan

Landowners can manage native vegetation on their property in the longer term by developing a Property Vegetation Plan (PVP) and entering in to an agreement with DELWP.

If an approved PVP applies to the land, ensure the PVP is attached to the application.

Applications under Clause 52.16

An application to remove, destroy or lop native vegetation is under Clause 52.16 if a Native Vegetation Precinct Plan (NVPP) applies to the land, and the proposed native vegetation removal is not in accordance with the relevant NVPP. If this is the case, a statement that explains how the proposal responds to the NVPP considerations must be provided.

If the application is under Clause 52.16, ensure a statement that explains how the proposal responds to the NVPP considerations is attached to the application.

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

Figure 1 – Map of native vegetation to be removed, destroyed or lopped

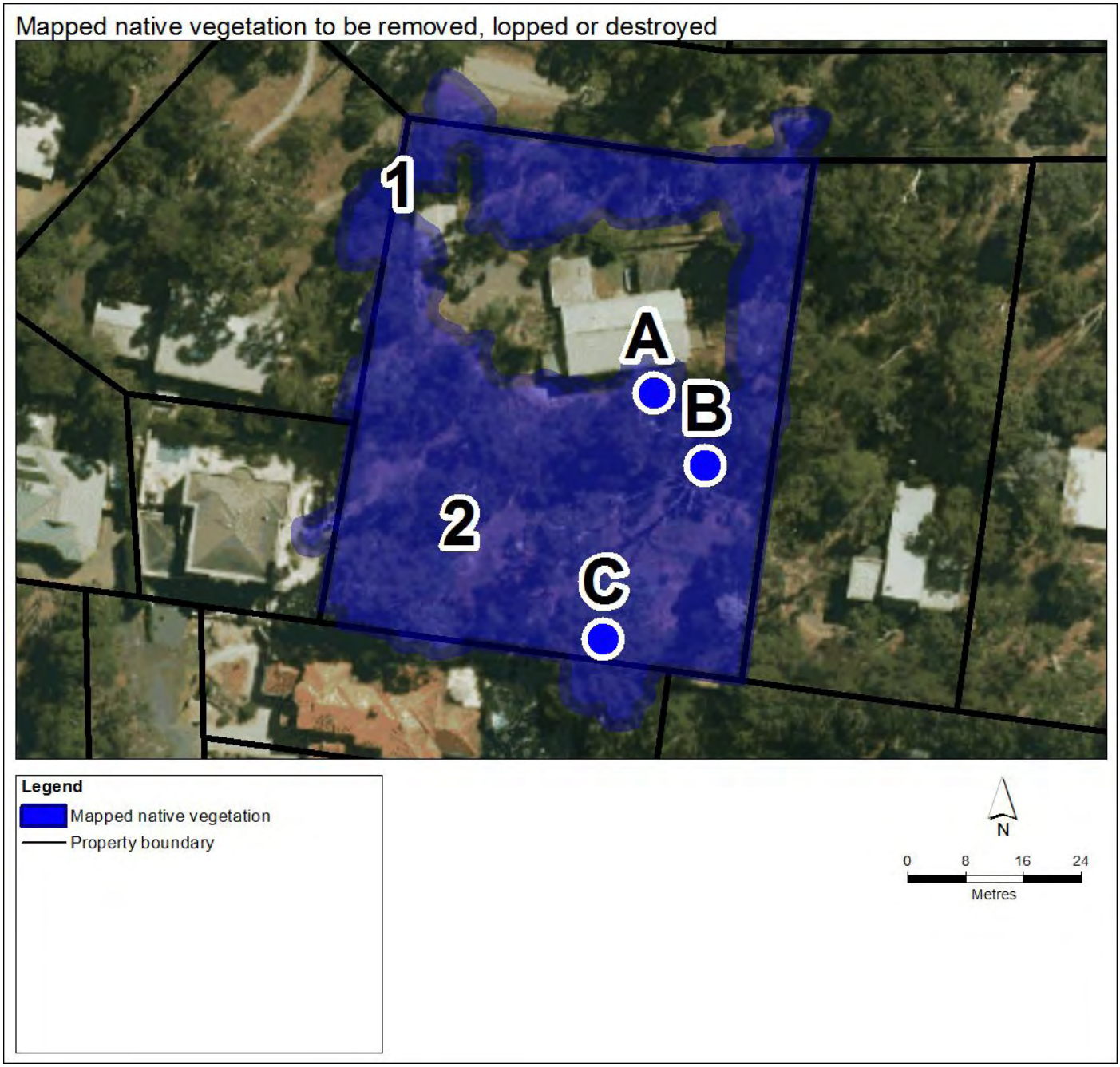


Figure 2 – Map of property in context

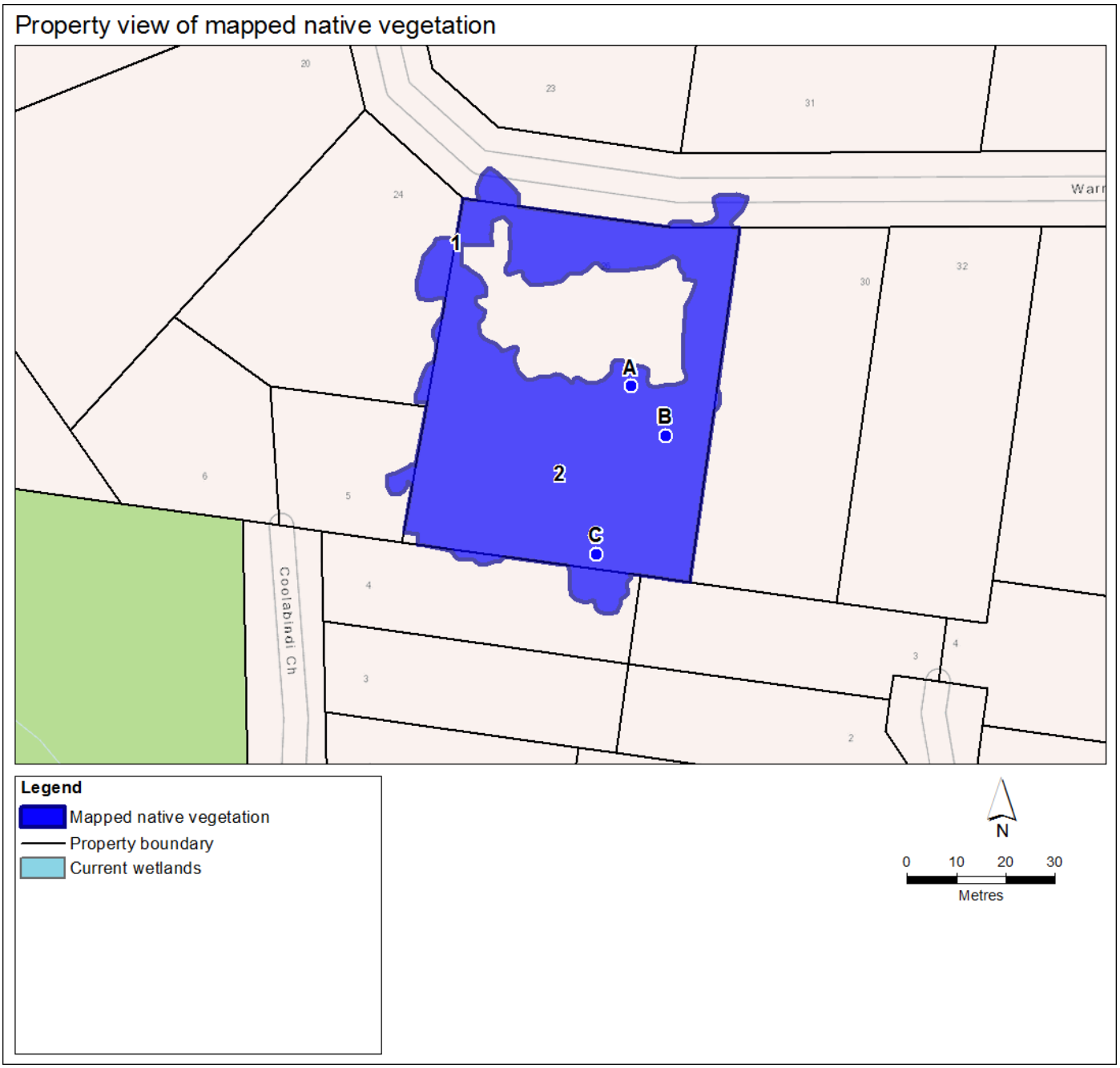
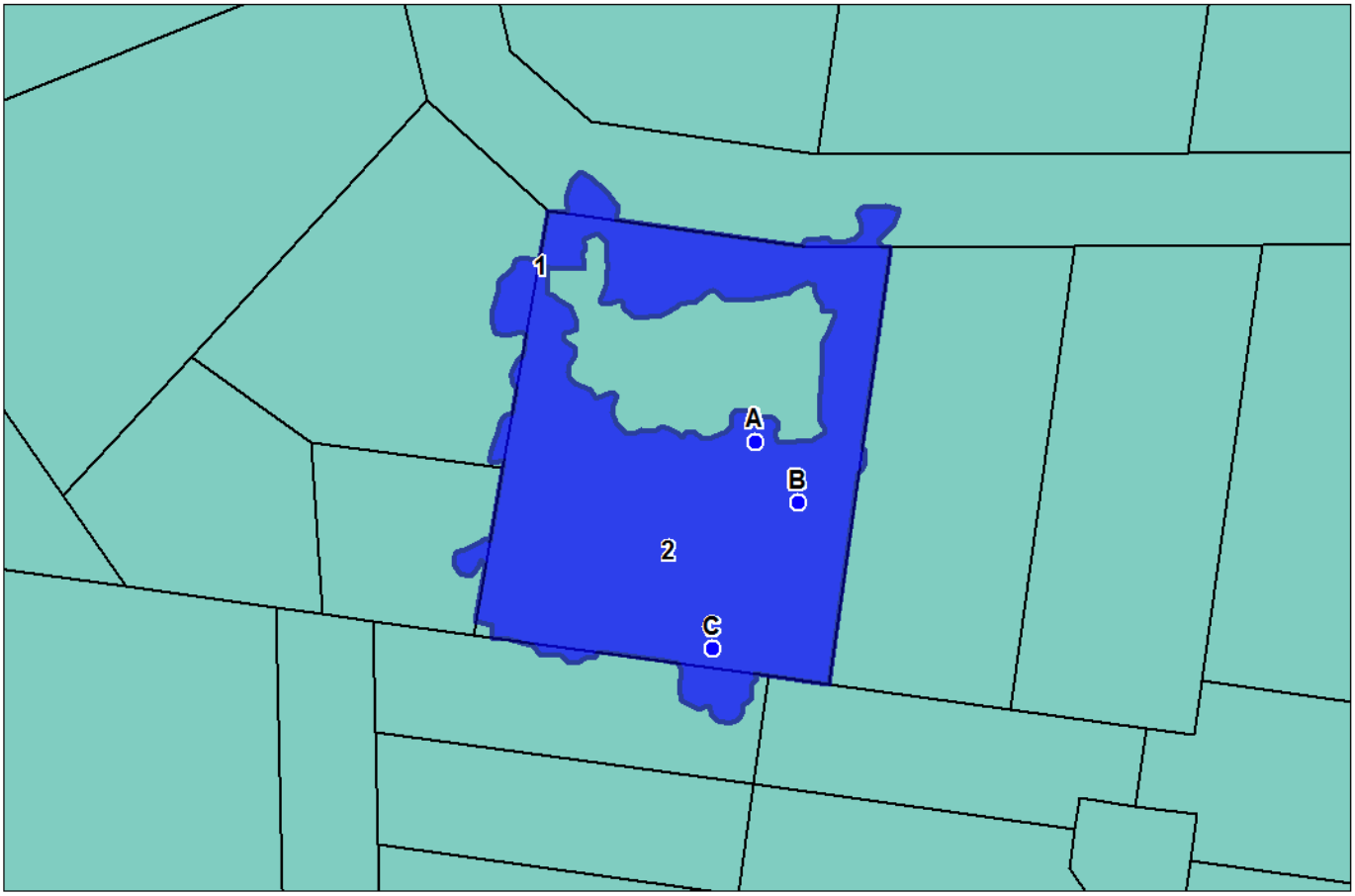


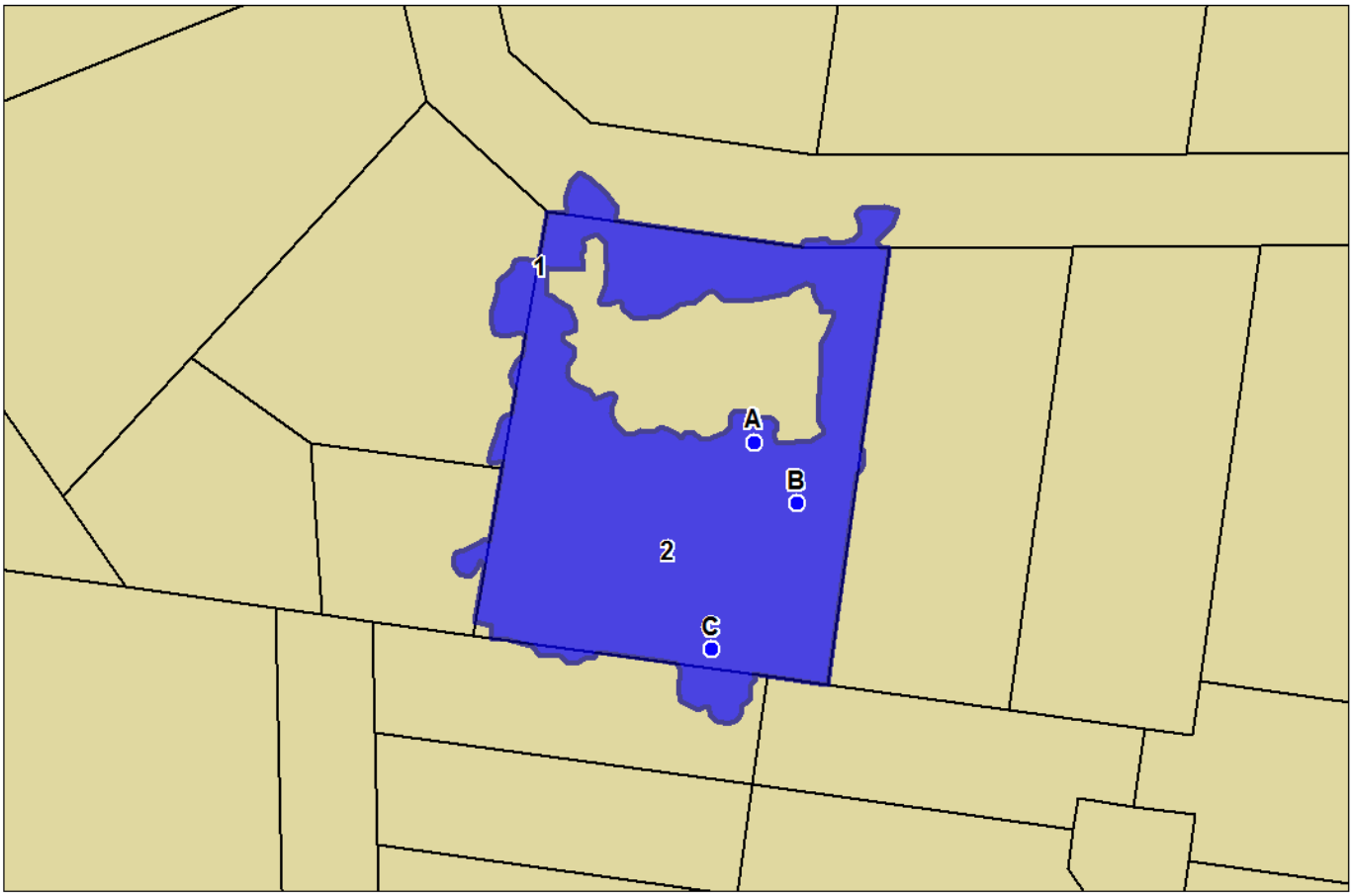
Figure 3 – Biodiversity information maps

Mapped native vegetation and the *Native vegetation location map*



Native vegetation removal report

Mapped native vegetation and the *Native vegetation condition map*



Legend

- Mapped native vegetation
- Property boundary

Native vegetation condition*

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

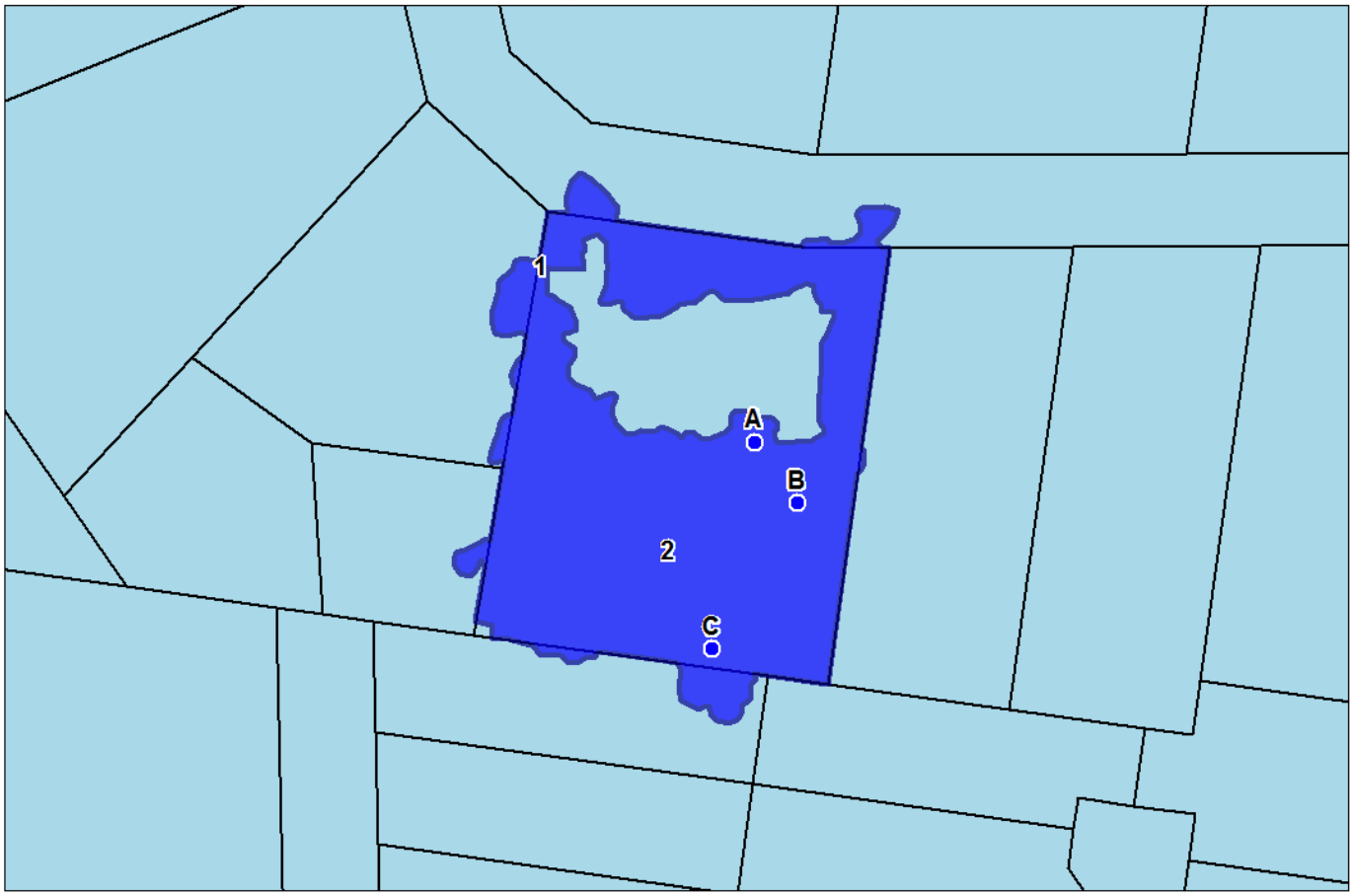
* These classes are for display purposes only

N

0 10 20 30

Metres

Mapped native vegetation and the *Strategic biodiversity value map*



Appendix 1 - Details of offset requirements

Native vegetation to be removed

Extent of all mapped native vegetation (for calculating habitat hectares)	0.352	The area of land covered by a patch of native vegetation and/or a scattered tree, measured in hectares. Where the mapped native vegetation includes scattered trees, each tree is assigned a standard extent and converted to hectares. A small scattered tree is assigned a standard extent defined by a circle with a 10 metre radius and a large scattered tree a circle with a 15 metre radius. The extent of all mapped native vegetation is an input to calculating the habitat hectares.
Condition score*	0.200	The condition score of native vegetation is a site-based measure that describes how close native vegetation is to its mature natural state. The condition score is the weighted average condition score of the mapped native vegetation calculated using the *Native vegetation condition map.*
Habitat hectares	0.070	Habitat hectares is a site-based measure that combines extent and condition of native vegetation. It is calculated by multiplying the extent of native vegetation by the condition score: ***Habitat hectares = extent x condition score***
Strategic biodiversity value score	0.260	The strategic biodiversity value score represents the complementary contribution to Victoria's biodiversity of a location, relative to other locations across the state. This score is the weighted average strategic biodiversity value score of the mapped native vegetation calculated using the *Strategic biodiversity value map*.
General landscape factor	0.630	The general landscape factor is an adjusted strategic biodiversity value score. It has been adjusted to reduce the influence of landscape scale information on the general habitat score.
General habitat score	0.044	The general habitat score combines site-based and landscape scale information to obtain an overall measure of the biodiversity value of the native vegetation. The general habitat score is calculated as follows: ***General habitat score = habitat hectares x general landscape factor***

* **Offset requirements for partial removal:** If your proposal is to remove parts of the native vegetation in a patch (for example only understorey plants) the condition score must be adjusted. This will require manual editing of the condition score and an update to the calculations that the native vegetation removal tool has provided: habitat hectares, general habitat score and offset amount.

Offset requirements

Offset type	General offset	A general offset is required when the removal of native vegetation does not have a significant impact on any habitat for rare or threatened species. All proposals in the Basic and Intermediate assessment pathways will only require a general offset.
Offset multiplier	1.5	This multiplier is used to address the risk that the predicted outcomes for gain will not be achieved, and therefore will not adequately compensate the biodiversity loss from the removal of native vegetation.
Offset amount (general habitat units)	0.066	The general habitat units are the amount of offset that must be secured if the application is approved. This offset requirement will be a condition to any permit or approval for the removal of native vegetation. ***General habitat units required = general habitat score x 1.5***
Minimum strategic biodiversity value score	0.208	The offset site must have a strategic biodiversity value score of at least 80 per cent of the strategic biodiversity value score of the native vegetation to be removed. This is to ensure offsets are located in areas with a strategic biodiversity value that is comparable to the native vegetation to be removed.
Vicinity	Port Phillip And Westernport CMA or Nillumbik Shire Council	The offset site must be located within the same Catchment Management Authority boundary or municipal district as the native vegetation to be removed.
Large trees	3 large tree (s)	The offset site must protect at least one large tree for every large tree removed. A large tree is a native canopy tree with a Diameter at Breast Height greater than or equal to the large tree benchmark for the local Ecological Vegetation Class. A large tree can be either a large scattered tree or a large patch tree.

Appendix 5. Sites meeting the requirement for general offsets

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: 12/03/2020 03:33 **Report ID: 3351**

What was searched for?

General offset

General habitat units	Strategic biodiversity value	Large trees	Vicinity (Catchment Management Authority or Municipal district)	
0.066	0.208	3	CMA	Port Phillip and Westernport
			or LGA	Nillumbik Shire

Details of available native vegetation credits on 12 March 2020 03:33

These sites meet your requirements for general offsets.

Credit Site ID	GHU	LT	CMA	LGA	Land owner	Trader	Fixed price	Broker(s)
BBA-0670	27.214	362	Port Phillip and Westernport	Cardinia Shire	Yes	Yes	No	Contact NVOR
BBA-0678	50.092	2668	Port Phillip and Westernport	Nillumbik Shire	Yes	Yes	No	Contact NVOR
BBA-0678_2	0.388	59	Port Phillip and Westernport	Nillumbik Shire	Yes	Yes	No	Contact NVOR
BBA-1052	0.358	15	Port Phillip and Westernport	Cardinia Shire	Yes	Yes	No	Contact NVOR
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
BBA-2832	2.192	7	Port Phillip and Westernport	Nillumbik Shire	Yes	Yes	Yes	Nillumbik SC
BBA-2870	3.087	446	Port Phillip and Westernport	Yarra Ranges Shire	Yes	Yes	Yes	EHP
BBA-2871	17.458	1668	Port Phillip and Westernport	Yarra Ranges Shire	Yes	Yes	No	Contact NVOR
BBA-3013	0.185	141	Port Phillip and Westernport	Moorabool Shire	Yes	Yes	No	VegLink
BBA-3045	1.478	8	Port Phillip and Westernport	Melton City	Yes	Yes	No	Bio Offsets
TFN-C1636	3.162	217	Port Phillip and Westernport	Yarra Ranges Shire	Yes	Yes	Yes	Yarra Ranges SC
TFN-C1650	2.839	99	Port Phillip and Westernport	Yarra Ranges Shire	Yes	Yes	Yes	Yarra Ranges SC

TFN-C1663	0.312	28	Port Phillip and Westernport	Yarra Ranges Shire	Yes	Yes	Yes	Yarra Ranges SC
TFN-C1664	3.635	96	Port Phillip and Westernport	Yarra Ranges Shire	Yes	Yes	Yes	Yarra Ranges SC
TFN-C1667	0.859	10	Port Phillip and Westernport	Yarra Ranges Shire	Yes	Yes	Yes	Yarra Ranges SC
TFN-C1750	3.186	11	Port Phillip and Westernport	Cardinia Shire	Yes	Yes	No	Bio Offsets
TFN-C1782	0.113	7	Port Phillip and Westernport	Macedon Ranges Shire	Yes	Yes	No	VegLink
TFN-C1962	1.446	20	Goulburn Broken, Port Phillip and Westernport	Macedon Ranges Shire	No	Yes	No	Contact NVOR
VC_CFL-0838_01	8.622	897	Port Phillip And Westernport	Yarra Ranges Shire	Yes	Yes	No	Enviro Offset, VegLink
VC_CFL-0838_01	0.541	4	Port Phillip And Westernport	Yarra Ranges Shire	No	Yes	No	Contact NVOR
VC_CFL-3016_01	2.291	36	Port Phillip And Westernport	Yarra Ranges Shire	Yes	Yes	No	EHP
VC_CFL-3054_01	9.128	12	Port Phillip and Westernport	Moorabool Shire	Yes	Yes	No	Ethos
VC_CFL-3084_01	1.964	679	Port Phillip And Westernport	Cardinia Shire	Yes	Yes	No	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)

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 lopping 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)

There are no potential sites listed in the Native Vegetation Credit Register that meet your offset requirements.

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
Abezco	Abzeco Pty. Ltd.	(03) 9431 5444	offsets@abzeco.com.au	www.abzeco.com.au
Bass Coast SC	Bass Coast Shire Council	(03) 5671 2125	d.whittington@basscoast.vic.gov.au	www.basscoast.vic.gov.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 avaliable
EHP	Ecology & Heritage Partners Pty Ltd	(03) 9377 0100	offsets@ehpartners.com.au	www.ehpartners.com.au
Enviro Offset	Enviro Offset Trading Pty Ltd	(03) 5444 0002	info@envirooffsettrading.com.au	www.envirooffsettrading.com.au
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) 5470 5232	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

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

Appendix 6. Maps

PRACTICAL ECOLOGY
ecological restoration & consulting

Disclaimer
Practical Ecology bears no responsibility for the accuracy and completeness of this information and any decisions or actions taken on the basis of the map. While information appears accurate at publication, nature and circumstances are constantly changing.

Legend

- Subject site
- Parcels
- Contours (10m)

Details

Date: 28/02/2020
Version: 1

Data Source: Base layers courtesy of VicMap, Copyright © State of Victoria. Aerial photography from Nearmap (Dec 2019).

Map 1. Subject site
26 Warringah Crescent, Eltham

N

0 5 10 m

Scale 1:300 (Page size A3)

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Disclaimer
Practical Ecology bears no responsibility for the accuracy and completeness of this information and any decisions or actions taken on the basis of the map. While information appears accurate at publication, nature and circumstances are constantly changing.

Legend

- Subject site
- Parcels
- Contours (10m)
- Tree Protection Zone (TPZ)

Large Trees

- Candlebark
- Yellow Box

Habitat Zone

- EVC 47: Valley Grassy Forest

Details

Date: 5/03/2020
Version: 1

Data Source: Base layers courtesy of VicMap, Copyright © State of Victoria. Aerial photography from Nearmap (Dec 2019).

Map 2. Ecological assessment

26 Warringah Crescent, Eltham

N

0 5 10 m

Scale 1:300 (Page size A3)

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Disclaimer
Practical Ecology bears no responsibility for the accuracy and completeness of this information and any decisions or actions taken on the basis of the map. While information appears accurate at publication, nature and circumstances are constantly changing.

Legend

- Subject site
- Proposed building envelope
- Proposed accessway

Large Trees

- Candlebark
- Yellow Box

Habitat Zone

- EVC 47: Valley Grassy Forest
- Native vegetation to be removed
- Tree considered as lost
- Tree to be removed

Details

Date: 13/03/2020
Version: 1

Data Source: Base layers courtesy of VicMap, Copyright © State of Victoria. Aerial photography from Nearmap (Dec 2019).

Map 3. Vegetation losses
26 Warringah Crescent, Eltham

N

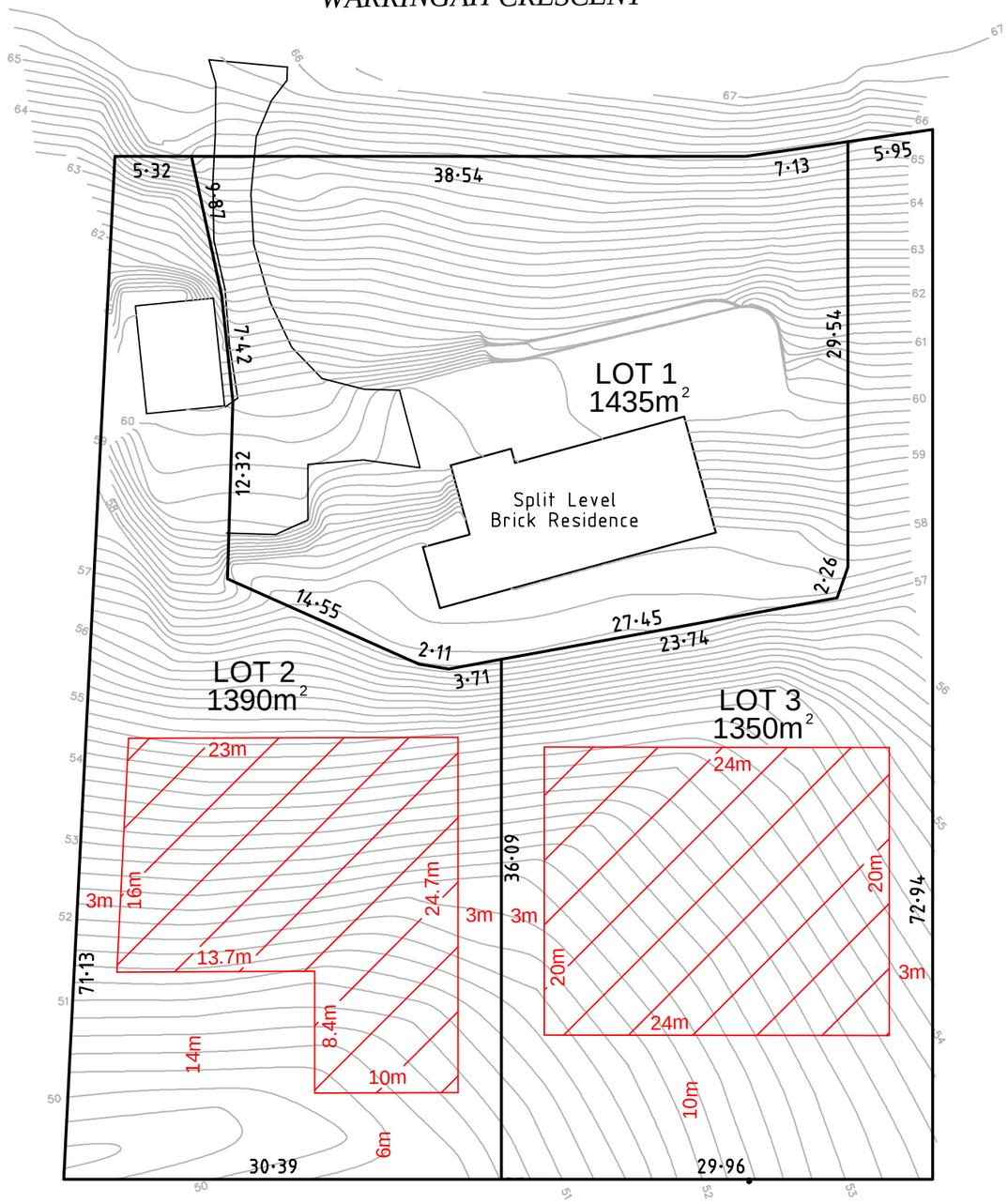
0 5 10 m

Scale 1:300 (Page size A3)

Appendix 7. Detailed plans

APPROX. NORTH

WARRINGAH CRESCENT



NOTATIONS

Denotes Building Envelope

Building Envelope Sizes

Lot 2: 462sq.m
Percentage of Lot Area: 33%

Lot 3: 479sq.m
Percentage of Lot Area: 35%

Levels shown on this plan are to Australian Height Datum vide NILLUMBIK PM 615 (R.L. 50.90m)

Contour interval 0.2 metres

REVISIONS

Version	Description	Date

JOB TITLE
26 WARRINGAH CRESCENT
ELTHAM 3095

DRAWING NAME
PLAN OF BUILDING ENVELOPES

DRAWING REFERENCE
1688501F

VERSION
01

LAND DESCRIPTION
LOT 6 ON LP58605

DATE DRAWN
04/03/2020

ORIGINAL SHEET SIZE
A3

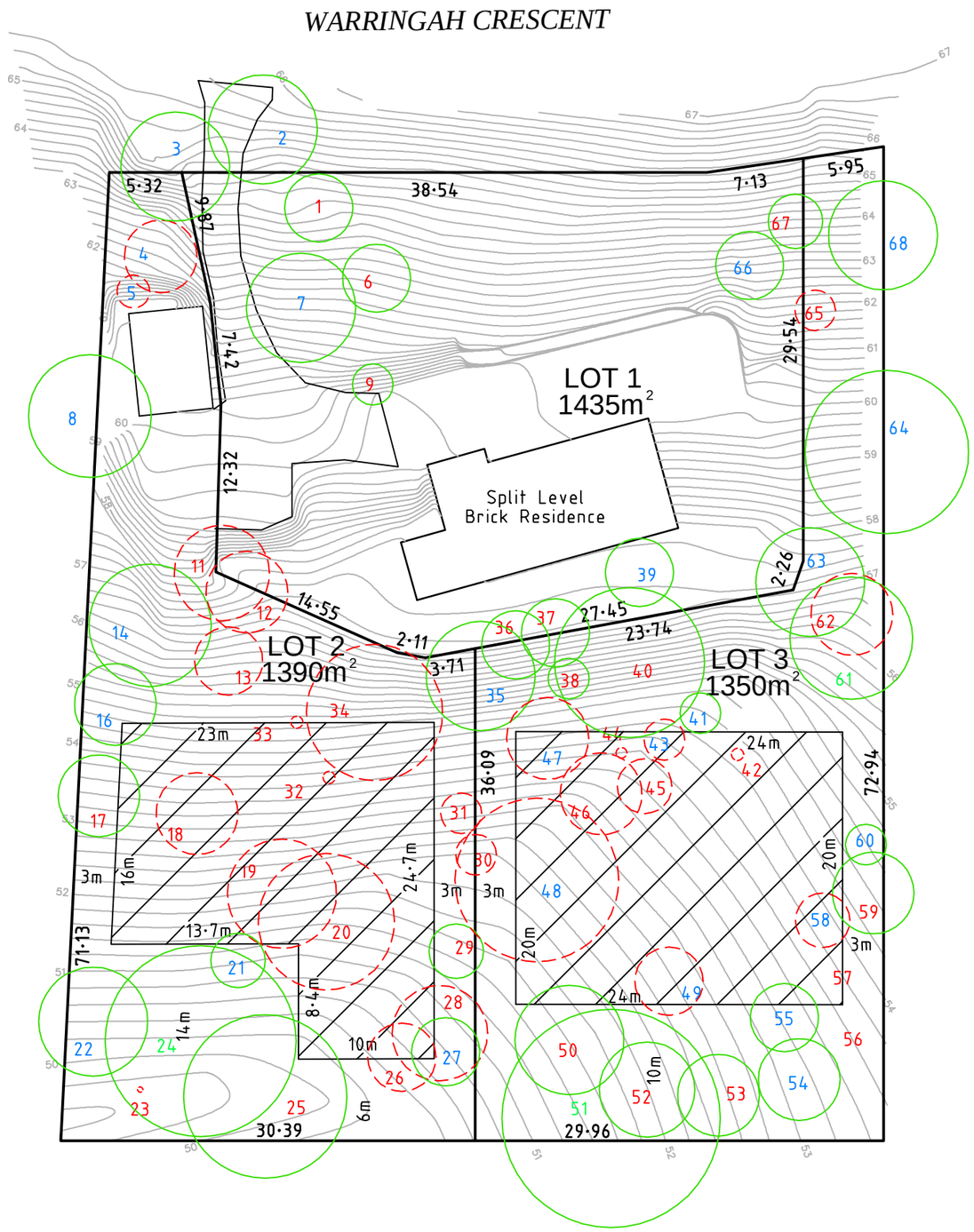
SHEET No
1 of 1

DRAWN BY
BW

SCALE
1:250
1.25 0 1.25 2.5 3.75 5
LENGTHS ARE IN METRES

WEBSTER SURVEY GROUP
ABN: 35 456 993 855
662 Main Road, Eltham 3095
P.O Box 291, Eltham 3095
Telephone: (03) 9439 4222
Facsimile: (03) 9439 5288
webstergroup.com.au

APPROX. NORTH



NOTATIONS

Denotes tree to be retained

Denotes tree to be removed

Denotes Building Envelope

Tree Identification shown thus 2 indicates Low Retention Value
Tree Identification shown thus 2 indicates Medium Retention Valu
Tree Identification shown thus 2 indicates High Retention Value

Levels shown on this plan are to Australian Height Datum vide NILLUMBIK PM 615 (R.L. 50.90m)

Contour interval 0.2 metres

REVISIONS

Version	Description	Date

JOB TITLE
26 WARRINGAH CRESCENT
ELTHAM 3095

DRAWING NAME
PLAN OF TREE LOCATIONS

DRAWING REFERENCE
1688501G

VERSION
01

LAND DESCRIPTION
LOT 6 ON LP58605

DATE DRAWN
04/03/2020

ORIGINAL SHEET SIZE
A3

SHEET No
1 of 1

SCALE
1:250
1.25 0 1.25 2.5 3.75 5
LENGTHS ARE IN METRES

DRAWN BY
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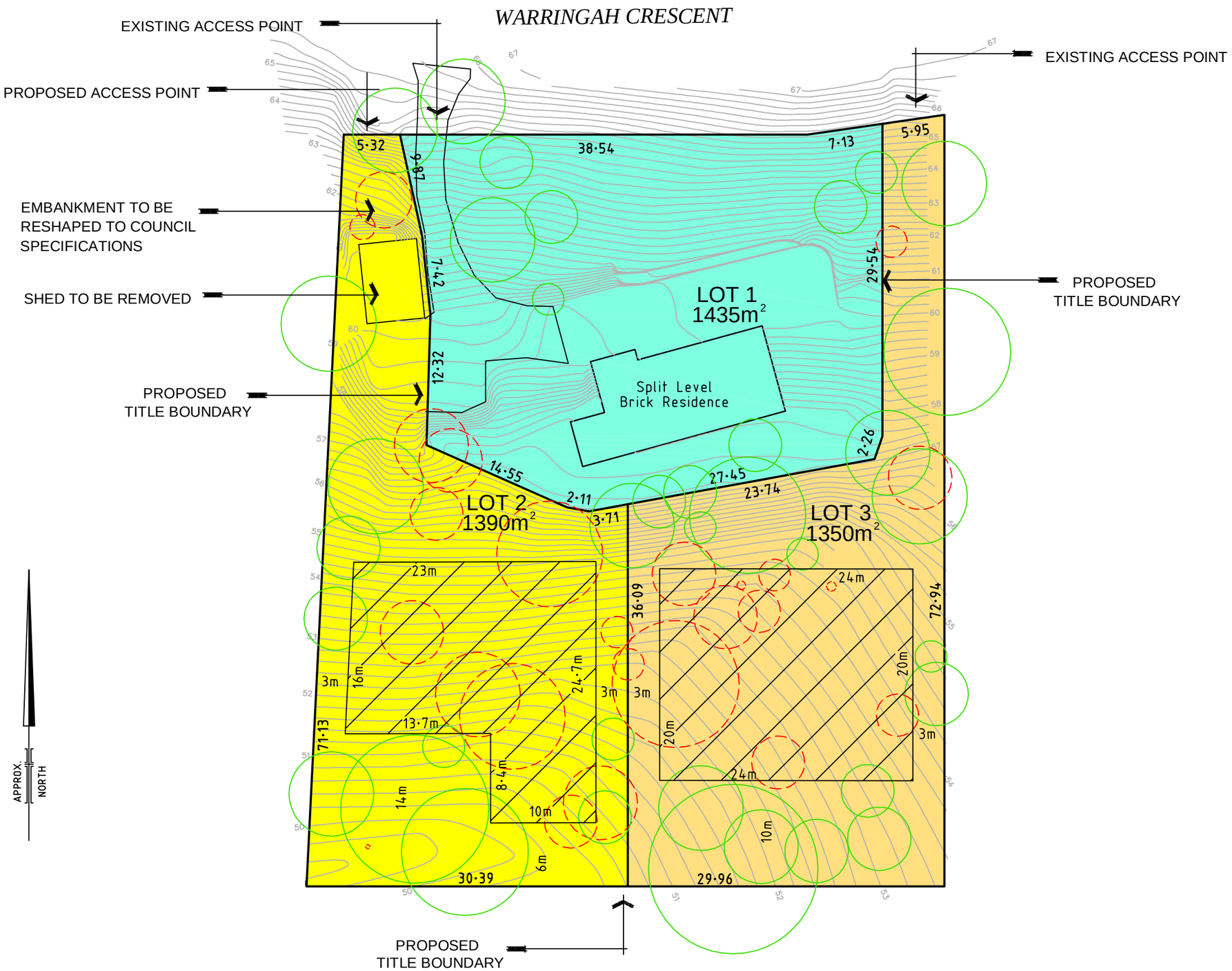

NOTATIONS

- Denotes tree to be retained
- Denotes tree to be removed
- Denotes Building Envelope

Levels shown on this plan are to Australian Height Datum vide NILLUMBIK PM 615 (R.L. 50.90m)

Contour interval 0.2 metres

REVISIONS

Version	Description	Date

JOB TITLE
26 WARRINGAH CRESCENT
ELTHAM 3095

DRAWING NAME
DESIGN RESPONSE

DRAWING REFERENCE
1688501H

VERSION
01

LAND DESCRIPTION
LOT 6 ON LP58605

DATE DRAWN
04/03/2020

ORIGINAL SHEET SIZE
A3

SHEET No
1 of 1

SCALE
1:250
1.25 0 1.25 2.5 3.75 5
LENGTHS ARE IN METRES

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This document consists of 17 pages

Arboricultural Assessment & Report – Subdivision

26 Warringah Crescent, Eltham

For: Mark Lendon

Wednesday 18th December 2019

Arboricultural Assessment and Report
26 Warringah Crescent, Eltham

Report By: Graeme Lewis
Consulting Arborist

Mobile: 0400 260 484

Objectives

To assess those trees located within and adjacent the subject site that may be affected by a proposal to subdivide the land.

To provide an assessment of the subject trees detailing their health, structure, form, dimensions, origin, planning scheme status, retention value, Structural Root Zones and Tree Protection Zones.

To assess the potential impact that the proposal may have upon the existing trees.

To provide remedial and tree protection information..

Methodology

A site inspection was undertaken on Monday 16th December, 2019. The trees were from assessed ground level and observations made of the site and surrounding area. No aerial inspection, intrusive investigation or sampling of the tree/s or soil was undertaken. Visual observations were undertaken to determine health, structure and canopy form. Canopy height was estimated, canopy width was measured using a laser-measuring device and trunk diameters measured using a forester's diameter tape at 1.3m from grade.

I have viewed *Feature & Level Survey,* by Webster Survey Group, dated 22.03.2019. A copy is provided in Appendix 4.

Numerical identifiers ascribed to individual trees correspond with those numbers placed on the plan provided in appendix 4 of this report.

Observations

The subject site consists of a Neighbourhood Residential Zone (Schedule 1) allotment in Eltham, a suburb located within the Shire of Nillumbik. The site slopes moderately from its northern road frontage towards the rear southern boundary. Approximately halfway towards the rear set back the topography levels out and is gently undulating. An existing brick dwelling and tin garage is situated towards the Warringah Crescent boundary, with a level of cut and fill used to achieve surface levels. Some informal ramps of grassed fill have been formed to provide vehicle access to the rear setback.

A population of naturally occurring indigenous canopy trees exist in an informal pattern across the site, some introduced species have also been planted.

The assessed indigenous species consist of *Eucalyptus melliodora* (Yellow Box), *Eucalyptus rubida* (Candlebark), *Eucalyptus goniocalyx* (Long Leaved Box), *Eucalyptus macrorhyncha* (Red Stringybark), *Acacia mearnsii* (Black Wattle) and *Exocarpos cupressiformis* (Cherry Ballart).

The site is subject to Environmental Significant Overlay (Schedule 1) of the Shire of Nillumbik Planning Scheme. A key component of ESO1 is the protection of any vegetation that is not listed as a pest plant under The Shire of Nillumbik's Environmental weed list 2004. Exemptions also apply for trees that are dead (less than 40cm in trunk diameter at 1.3m from grade), trees grown for amenity or agricultural purposes, shelter belts, woodlots, street trees, gardens or the like. The above exemptions do not apply if public funding was provided to plant or manage the vegetation and the terms of the funding did not anticipate removal or harvesting of that vegetation.

The site is also subject to Significant Landscape Overlay (Schedule 2) of the Nillumbik Planning Scheme. This local provision provides protection for all native trees and requires planning permission for certain buildings and works within 5 metres of a substantial native tree (being a tree that is native to Victoria and has a trunk circumference greater than 500mm at 1m from grade – or 16cm diameter at 1m from grade.) Exemptions apply for the removal of dead trees and pruning to assist in regeneration. For the purposes of the planning scheme, native vegetation is defined as that which originates within Victoria.

As the land is greater than 0.4 of a hectare it is subject to Clause 52.17 State Vegetation Controls. A key component of Clause 52.17 is the protection of native vegetation. Exemptions apply for trees that are dead (less than 40cm in trunk diameter at 1.3m from grade), trees grown for amenity or agricultural purposes, shelter belts, woodlots, street trees, gardens or the like. The above exemptions do not apply if public funding was provided to plant or manage the vegetation and the terms of the funding did not anticipate removal or harvesting of that vegetation. This last condition is more aligned with environmental plantings such as forested streamside margins and the like.

It is proposed to subdivide the site into three allotments, with the existing dwelling to be retained within Lot 1 and two further allotments located towards the rear part of the site.

Although subdivision will not affect tree health *per se*, it is evident that new dwellings, building envelopes and driveway envelopes will be proposed in the future.

Discussion

Tree Value

Trees can make a positive contribution to the appeal of a completed development by providing a visual softening of the built form, a maturity to the landscape, a connection with the pervading landscape and neighbourhood character, they also provide scale, shade, beauty and habitat. However not all trees are suitable for retention particularly within a proposed development. An arboricultural assessment will ultimately place a retention value on the existing vegetation, depending on that vegetations potential to have a positive or negative influence on the site proposal.

Assigning a tree a retention value is required under AS4970 2009 *Protection of Trees on Development Sites* and usually requires consideration of many factors such as a trees amenity value, longevity, tolerance to impact, anti social traits, habitat, safety, planning scheme status etc. Consequently it is a fairly subjective process, however in general the following applies:

- Trees of low retention value are unsuitable for retention,
- Trees of medium retention value can be retained if site constraints can accommodate tree retention,
- Trees of high retention value are recommended for retention and should be accommodated within the design process.

Tree Retention and Acceptable Impacts

If trees are to be successfully retained within a development site then measures must be taken to ensure adequate protection of the canopy and root mass. To this end an arborist identifies Tree Protection Zones (TPZ) so that adequate amounts of canopy and root mass are left unaffected by construction, thereby providing for a healthy, stable, long-term tree resource. The Tree Protection Zone is calculated by multiplying the trunk diameter at 1.4m from grade by twelve whilst the Structural Root Zone (SRZ) is calculated by using a diameter measurement above the root buttress. Whilst the TPZ maintains tree health, the SRZ is critical in maintaining a trees anchorage. Both the TPZ and SRZ are shown on plan as a circle, measured as a radius from trunk centre. However this circle is not usually an accurate reflection of a trees true root or canopy pattern, as both of these structures will often form asymmetric shapes that are a product of their local environment. For example canopies may be pruned, storm damaged or influenced by nearby trees, available sunlight and structures whilst root growth may be influenced by adjacent built form, other tree roots, soil type, moisture gradients, leaking pipes, topography etc.

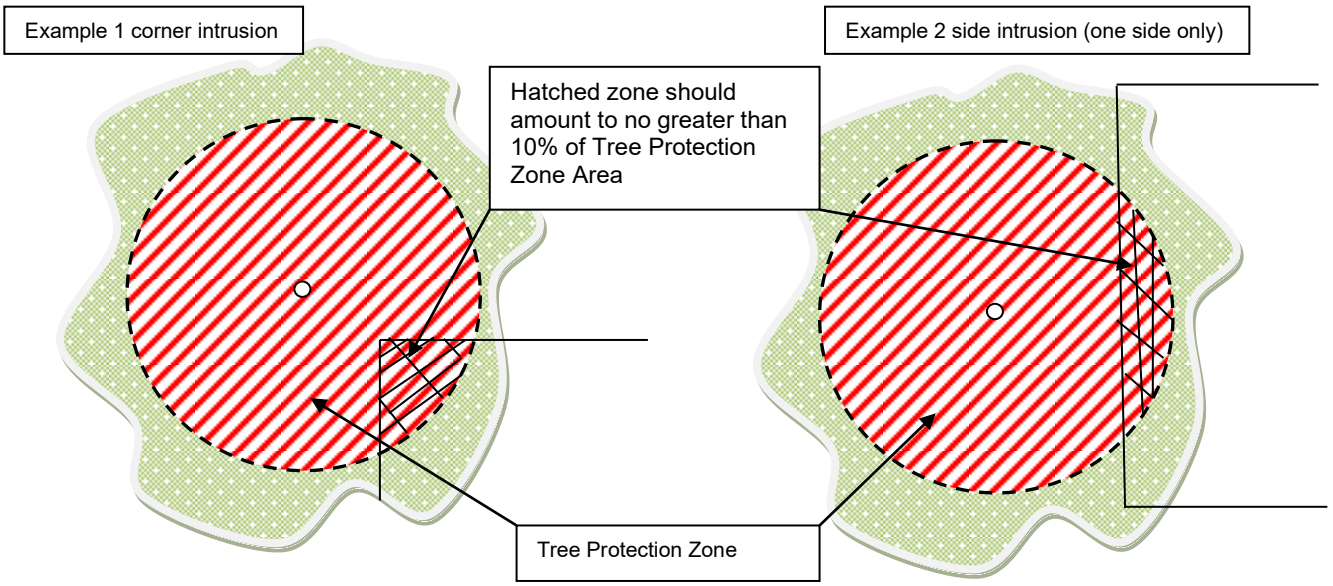
AS4970 2009 determines that it may be possible to encroach or make variations to the standard TPZ. Where encroachments into a TPZ are proposed, whether minor or major, the TPZ should be compensated for elsewhere and contiguous with the TPZ.

Where minor encroachments (<10% of TPZ area) occur, variations must be made by the project arborist considering relevant factors listed in Section 3.3.4 TPZ Encroachment Considerations, these are:

- exploratory root excavation,
- potential loss of roots, number and size,
- Tree species and tolerance to root disturbance
- Age, vigour and size of the tree
- Lean and stability of the tree (and supporting roots)
- Soil characteristics and volume, topography and drainage
- The presence of existing or past structures or obstacles affecting root growth
- Design factors

Where major encroachments (>10% of TPZ area) are proposed the project arborist must demonstrate how the tree would remain viable. This may require root investigation by non-destructive methods and consideration of relevant factors listed in Section 3.3.4.

Figure 1. Examples of acceptable Tree Protection Zone Intrusions



Example: TPZ area = 150m2. Acceptable encroachment = 15m2 (10% of TPZ area)

Tree Protection

In order to protect trees on construction sites tree protection fencing must be erected prior to the commencement of any demolition, excavation or construction works. Tree protection fencing excludes access and defines the extent of the TPZ given for all retained trees. If construction is set at the edge or close to the TPZ then the fence may be temporarily moved to facilitate construction - with the approval of the responsible authority. N.B. The relocation of the fence does not indicate a change in the TPZ of the tree and suitable protection measures must be undertaken; this may include the use of heavy plywood sheeting laid over a bed of coarse mulch to reduce soil compaction from vehicles and pedestrian traffic. The relocation of the protection fence should be used for short-term purposes only and must be reinstalled as soon as possible. Tree protection fencing specifications are listed in Tree Protection Measures, Appendix 3 of this report.

An Overview of the Subject Trees

Sixty-five individual trees and one tree group contain three trees were assessed. Three trees exist within the Warringah Crescent roadside reserve, two are located in neighbouring properties and the remaining trees within the subject site. Of these, the most prominent trees are the indigenous Candlebark, Yellow Box and Long Leaved Box.

Most of the larger Candlebark display hollow decaying structures and evidence of past limb failures. Although important as habitat to local fauna, they would not integrate well into a residential site due to the associated risk of falling tree parts and their relatively poor tolerance to development.

The sites Yellow Box are appropriate trees for integration within a residential site as they tend to be more stable in terms of their structure, when well-formed and good tolerance to development.

The Long Leaved Box have moderate tolerance to development, however their natural form is usually one that displays heavily leaning trunks and canopies, which would not usually appreciated by future site occupants. Some pruning can rectify these concerns to a certain extent.

The subject trees display varying levels of health, structural condition and usefulness, which is reflected in the retention value assigned to each tree. Of the assessed population three (3) have high retention value, twenty-seven (27) have medium retention value and thirty-eight (38) have low retention value.

Tree nos.24, 51 & 61 are of high retention value as they displayed such good overall condition; landscape contribution and long expected remaining usefulness. They are all located within the subject site.

The medium retention value trees are nos. 2, 3, 4, 5, 7, 8, 10, 14, 16, 21, 22, 27, 35, 39, 41, 43, 47, 48, 49, 54, 55, 58, 60, 63, 64, 66 and 68. They are not significantly good examples or of significant size and condition, but they do still offer some value to the site. Of these, trees 2, 3, 8 & 64 are located external to the subject site.

Tree nos. 1, 6, 9, 11, 12, 13, 15, 17, 18, 19, 20, 23, 25, 26, 28, 29, 30, 31, 32, 33, 34, 36, 37, 38, 40, 42, 44, 45, 46, 50, 52, 53, 56, 57, 59, 62, 65 and 67 are of low retention value. They are considered a liability to their respective sites as they are environmental weeds, have hazardous structure, are dead, in poor health or display poor structural condition. All trees of low retention value are recommended for removal where they exist within the subject site. Apart from tree 1, they are all located within the subject site.

Planning Considerations

Significant Landscape Overlay (Schedule 2) requires planning permission to lop, remove or destroy trees3, 4, 5, 6, 7, 8, 11, 12, 13, 14, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 30, 31, 34, 35, 40, 41, 43, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67 & 68.
Of these, trees 3, 4, 6, 7, 8, 99, 12, 13, 14, 16, 17, 18, 19, 20, 22, 23, 24, 25, 26, 27, 32, 33, 34, 40, 41, 45, 46, 47, 48, 49, 50, 51, 53, 54, 58, 59, 61, 62, 63, 64, 65, 66 & 68 are defined as 'substantial trees' under the overlay.

Environmental Significance Overlay (Schedule 1) & Clause 52.17 share identical provisions for permit requirements pertaining to native trees. Consequently a permit is required to lop, remove or destroy trees 3, 4, 5, 6, 7, 8, 11, 12, 13, 14, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 30, 31, 32, 33, 34, 35, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 51, 54, 56, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67 & 68.

Conclusions & Recommendations

The proposal to subdivide the land will not adversely affect the existing trees *per se,* however future building works may require tree removal or compromise tree health through changes to the trees growing environment. The development impact of future buildings and works upon the existing trees will probably be assessed within future permit applications made to Council.

The future location of crossovers, driveways and building envelopes should consider the retention value of the subject trees and their respective Tree Protection Zone requirements. To that end the SRZ's & TPZ's of retained trees must be placed on the plan of subdivision, this information is provided in Appendix 1.

Encroachment to the TPZ should be restricted to 15% of TPZ area of retained Yellow Box, 12% of the TPZ area of retained Long Leaved Box and less than 10% of the TPZ area of retained Candlebark.

The TPZ encroachment provisions can be safely ignored in two 'ramped' areas of fill, which are currently used for vehicle access to the rear are good candidates for driveway envelopes, as any change to the trees growing conditions has already occurred.

The connection to underground services could have the capacity to require further tree losses or adversely affect tree health. However, tree losses or potential health impacts can be minimised by utilising underground boring to sensitively install these services.

Tree protection measures in accordance with AS4970 2009 *Protection of Trees on Development Sites* must be installed, where possible, to the extent of the retained trees TPZ prior to the commencement of any site works. Tree protection guidelines are provided in Appendix 3.

Graeme Lewis
Consultant Arborist
Diploma of Horticulture (Arboriculture) - (Melbourne University) – Level 5 AQF
Advanced Certificate Arboriculture (VCAH Burnley)
Qualified Tree Risk Assessor (International Society of Arboriculture)
Victorian Tree Industry Organisation - Member
Arboriculture Australia - Member

References:

ASA 4907 2009 *Protection of Trees on Development Sites* (Standards Australia)

Appendix 1

***DESCRIPTORS IN APPENDIX 2**
DBH = DIAMETER OF TRUNK AT 1.3M FROM GRADE. TPZ = TREE PROTECTION ZONE (MEASURED AS A RADIUS FROM THE TRUNK CENTRE). SRZ= STRUCTURAL ROOT ZONE.
*** INDICATES A TREE WITH MULTIPLE TRUNKS.**

No.	Botanical Name	Common Name	Height (m)	Width (m)	Health	Structure	Form	Origin	DBH (cm)	TPZ (m)	SRZ (m)	Retention Value	Comments
1	*Eucalyptus macrorhyncha*	Red Stringybark	12	4	Dead	Poor	Fair	Indigenous	38	N/A	2.4	Low	
2	*Eucalyptus nicholii*	Narrow Leaved Black Peppermint	14	9	Fair	Fair	Poor	Planted NSW Native	46	5.5	2.4	Medium	
3	*Eucalyptus melliodora*	Yellow Box	22	12	Good	Fair	Good	Indigenous	60	7.2	2.8	Medium	300mm deep cavity in trunk at 2m from grade.
4	*Exocarpos cupressiformis*	Cherry Ballart	9	7	Good	Poor	Fair	Indigenous	28	3.4	2.2	Medium	Past limb failures
5	*Exocarpos cupressiformis*	Cherry Ballart	5	3	Good	Fair	Fair	Indigenous	10	2	1.5	Medium	
6	*Eucalyptus goniocalyx*	Long Leaved Box	13	8	Good	Poor	Poor	Indigenous	38	4.6	2.4	Low	Lopped at 2m.
7	*Eucalyptus goniocalyx*	Long Leaved Box	13	10	Fair	Fair	Fair	Indigenous	34	4.1	2.4	Medium	Borer, kino staining.
8	*Eucalyptus goniocalyx*	Long Leaved Box	16	16	Good	Fair	Fair	Indigenous	55	6.6	2.8	Medium	Neighbouring tree. Heavy lean
9	*Melaleuca fulgens*	Scarlet Honey Myrtle	3	2	Poor	Poor	Fair	Planted WA Native	14	2	1.5	Low	Loose in ground.
10	*Acacia iteaphylla*	Flinders ranges wattle	5	5	Good	Fair	Fair	Planted SA Native	13	2	1.6	Medium	
11	*Eucalyptus goniocalyx*	Long Leaved Box	14	10	Poor	Fair	Fair	Indigenous	28	3.4	2.2	Low	Sparse canopy. Epicormics. Stressed tree.
12	*Eucalyptus goniocalyx*	Long Leaved Box	12	9	Poor	Poor	Poor	Indigenous	32	3.8	2.6	Low	Basal cavity. Epicormics. Heavy lean.
13	*Eucalyptus goniocalyx*	Long Leaved Box	13	7	Poor	Poor	Fair	Indigenous	32	3.8	2.3	Low	Sparse canopy. Epicormics. Stressed tree.

Appendix 1

No.	Botanical Name	Common Name	Height (m)	Width (m)	Health	Structure	Form	Origin	DBH (cm)	TPZ (m)	SRZ (m)	Retention Value	Comments
14	*Eucalyptus rubida*	Candlebark	16	11	Good	Fair	Poor	Indigenous	34	4.1	2.3	Medium	Crown lean to s/e
15	*Pittosporum undulatum*	Sweet Pittosporum	5	4	Good	Good	Fair	Environmental Weed	10	2	1.5	Low	Three Pittosporum and one Ligustrum lucidum
16	*Eucalyptus goniocalyx*	Long Leaved Box	11	8	Fair	Fair	Fair	Indigenous	23	2.8	2.2	Medium	Some epicormics. Stump regrowth.
17	*Eucalyptus goniocalyx*	Long Leaved Box	14	6	Good	Fair	Poor	Indigenous	31	3.7	2.3	Low	Tension wound at 5m.
18	*Eucalyptus goniocalyx*	Long Leaved Box	14	7	Fair	Poor	Fair	Indigenous	36	4.3	2.4	Low	Trunk decay. Borer.
19	*Eucalyptus goniocalyx*	Long Leaved Box	13	13	Good	Fair	Poor	Indigenous	47	5.6	2.5	Low	Tension wound. Suppressed form.
20	*Eucalyptus melliodora*	Yellow Box	17	12	Good	Fair	Poor	Indigenous	49	5.9	2.7	Low	Stem failure. Decaying trunk wound. Heavy crown lean.
21	*Eucalyptus melliodora*	Yellow Box	10	4	Good	Good	Poor	Indigenous	14	2	1.7	Medium	
22	*Eucalyptus melliodora*	Yellow Box	15	14	Good	Fair	Poor	Indigenous	34	4.1	2.3	Medium	Pruning stumps in canopy.
23	*Eucalyptus macrorhyncha*	Red Stringybark	15	4	Poor	Poor	Poor	Indigenous	33	4	2.3	Low	Dying tree.
24	*Eucalyptus melliodora*	Yellow Box	27	14	Good	Fair	Fair	Indigenous	57	6.8	2.8	High	
25	*Eucalyptus rubida*	Candlebark	17	10	Good	Fair	Poor	Indigenous	64	7.7	2.9	Low	Lopped at 11m
26	*Eucalyptus goniocalyx*	Long Leaved Box	13	8	Poor	Fair	Fair	Indigenous	26	3.1	2.1	Low	Sparse canopy. Epicormics. Stressed tree.
27	*Eucalyptus melliodora*	Yellow Box	9	7	Good	Good	Poor	Indigenous	30*	3.6	2.5	Medium	
28	*Acacia melanoxylon*	Blackwood	4	4	Poor	Poor	Fair	Indigenous	11	2	1.5	Low	
29	*Prunus cerasifera*	Cherry Plum	5	4	Good	Good	Good	Environmental Weed	13*	2	1.6	Low	
30	*Acacia melanoxylon*	Blackwood	5	2	Poor	Poor	Poor	Indigenous	13	2	1.6	Low	

Appendix 1

No.	Botanical Name	Common Name	Height (m)	Width (m)	Health	Structure	Form	Origin	DBH (cm)	TPZ (m)	SRZ (m)	Retention Value	Comments
31	*Acacia melanoxylon*	Blackwood	4	4	Poor	Poor	Fair	Indigenous	11	2	1.5	Low	
32	*Eucalyptus rubida*	Candlebark	18	10	Dead	Poor	Poor	Indigenous	48	N/A	2.6	Low	
33	*Eucalyptus rubida*	Candlebark	9	1	Dead	Poor	Poor	Indigenous	45	N/A	2.6	Low	
34	*Eucalyptus melliodora*	Yellow Box	18	18	Good	Poor	Poor	Indigenous	53	6.4	2.7	Low	Crowded acute stems. Included bark
35	*Eucalyptus goniocalyx*	Long Leaved Box	11	8	Fair	Fair	Fair	Indigenous	26	3.1	2.2	Medium	
36	*Callistemon citrinus*	Scarlet Bottlebrush	5	6	Poor	Fair	Fair	Planted NSW Native	11*	2	1.7	Low	
37	*Callistemon citrinus*	Scarlet Bottlebrush	5	4	Fair	Fair	Fair	Planted NSW Native	9	2	1.5	Low	
38	*Pittosporum undulatum*	Sweet Pittosporum	2	1	Good	Good	Good	Environmental Weed	2*	2	1.5	Low	
39	*Leptospermum petersonii*	Lemon-Scented Tea Tree	8	8	Fair	Fair	Fair	Planted NSW Native	17	2	1.7	Medium	
40	*Eucalyptus rubida*	Candlebark	24	14	Good	Poor	Fair	Indigenous	70	8.4	3	Low	Decaying trunk. Cavities. Past crown and limb failures.
41	*Acacia melanoxylon*	Blackwood	7	4	Fair	Fair	Fair	Indigenous	16	2	1.6	Medium	
42	*Eucalyptus rubida*	Candlebark	25	14	Dead	Poor	Fair	Indigenous	75	N/A	3.1	Low	
43	*Acacia melanoxylon*	Blackwood	7	5	Fair	Fair	Fair	Indigenous	16*	2	2.1	Medium	
44	*Eucalyptus rubida*	Candlebark	10	1	Dead	Poor	Poor	Indigenous	51	N/A	2.7	Low	Hollow stump.
45	*Eucalyptus goniocalyx*	Long Leaved Box	12	4	Poor	Poor	Poor	Indigenous	25*	3.1	2.5	Low	
46	*Eucalyptus melliodora*	Yellow Box	14	6	Good	Fair	Poor	Indigenous	22	2.6	2.1	Low	Heavily suppressed form.
47	*Acacia melanoxylon*	Blackwood	11	6	Fair	Fair	Fair	Indigenous	25	3	2.1	Medium	Senescent

Appendix 1

No.	Botanical Name	Common Name	Height (m)	Width (m)	Health	Structure	Form	Origin	DBH (cm)	TPZ (m)	SRZ (m)	Retention Value	Comments
48	*Eucalyptus rubida*	Candlebark	27	14	Fair	Fair	Poor	Indigenous	66	7.9	2.9	Medium	History of limb failures. Cavities present.
49	*Eucalyptus melliodora*	Yellow Box	10	5	Good	Good	Fair	Indigenous	25	3	2.1	Medium	
50	*Eucalyptus botryoides*	Southern Mahogany	14	11	Good	Fair	Fair	Planted VIC Native	46	5.5	2.6	Low	Poorly located under tree 51. Large surface roots. Limb shedding species.
51	*Eucalyptus melliodora*	Yellow Box	23	16	Good	Good	Good	Indigenous	72	8.6	3	High	
52	*Eucalyptus botryoides*	Southern Mahogany	14	7	Good	Poor	Poor	Planted VIC Native	36	4.3	2.3	Low	Trunk decay.
53	*Eucalyptus botryoides*	Southern Mahogany	9	4	Fair	Poor	Poor	Planted VIC Native	28	3.4	1.9	Low	Trunk decay.
54	*Eucalyptus melliodora*	Yellow Box	13	6	Good	Good	Fair	Indigenous	22	2.6	1.8	Medium	
55	*Grevillea robusta*	Silky Oak	14	6	Good	Good	Good	Planted QLD Native	24	2.9	2	Medium	
56	*Eucalyptus rubida*	Candlebark	24	8	Dead	Poor	Poor	Indigenous	52	N/A	2.7	Low	Leans to the north
57	*Acacia melanoxylon*	Blackwood	12	4	Dead	Poor	Fair	Indigenous	23	N/A	2.1	Low	
58	*Eucalyptus melliodora*	Yellow Box	12	6	Fair	Good	Fair	Indigenous	18	2.2	1.8	Medium	Borer in lower trunk
59	*Eucalyptus melliodora*	Yellow Box	14	9	Good	Fair	Poor	Indigenous	27	3.2	2.2	Low	Suppressed form
60	*Eucalyptus goniocalyx*	Long Leaved Box	12	4	Fair	Fair	Poor	Indigenous	14	2	1.6	Medium	
61	*Eucalyptus melliodora*	Yellow Box	16	11	Good	Fair	Fair	Indigenous	37	4.4	2.4	High	In fill.
62	*Acacia mearnsii*	Black Wattle	10	7	Poor	Poor	Poor	Indigenous	23	2.8	1.9	Low	Senescent. Borers. Limb failure.
63	*Eucalyptus rubida*	Candlebark	15	8	Fair	Fair	Poor	Indigenous	25	3	2.1	Medium	

Appendix 1

No.	Botanical Name	Common Name	Height (m)	Width (m)	Health	Structure	Form	Origin	DBH (cm)	TPZ (m)	SRZ (m)	Retention Value	Comments
64	*Eucalyptus rubida*	Candlebark	24	13	Good	Fair	Fair	Indigenous	68	8.2	2.9	Medium	Cavity and decay cankers present.
65	*Exocarpos cupressiformis*	Cherry Ballart	8	5	Poor	Poor	Fair	Indigenous	23	2.8	1.9	Low	
66	*Eucalyptus melliodora*	Yellow Box	12	5	Good	Fair	Fair	Indigenous	29	3.5	2.2	Medium	
67	*Eucalyptus macrorhyncha*	Red Stringybark	8	4	Poor	Fair	Poor	Indigenous	13	2	1.6	Low	
68	*Eucalyptus rubida*	Candlebark	20	13	Fair	Fair	Poor	Indigenous	66	7.9	2.9	Medium	Deadwood. Dead terminal. Probable trunk decay. In fill.

Appendix 2

Tree Descriptors Age:

Category	Description
Young	Sapling tree and/or recently planted. As a guide a tree up to ≈ 5 years of age.
Semi-mature	Tree rapidly increasing in size and yet to achieve expected size in situation.
Maturing	Specimen has reached expected size in situation, with reduced incremental growth.
Over-mature	Tree is senescent and in decline.
Dead	Tree is dead

Health:

Category	Description
Good	Good growth indicators, eg. extension growth. Crown full, with good density, foliage entire with good colour. No or minimal canopy dieback. Minimal or no pathogen damage. Good wound wood development.
Fair	Typical growth indicators, eg. extension growth, leaf size, canopy density for species in location. Tree may have <30% dead wood, or can have minor canopy dieback. Foliage generally with good colour, some discolouration may be present. Minor pathogen damage may be present.
Poor	Poor growth indicators. Tree may have >30% dead wood. Canopy dieback present. Discoloured or distorted leaves, and/or excessive epicormic growth. Pathogen is present and/or stress symptoms that could lead or are leading to decline of tree.

Structure:

Category	Description
Good	Good branch attachment and/or no or minor structural defects. Trunk and scaffold branches sound or minor damage. Good trunk and scaffold branch taper. No branch over extension. No damage to structural roots and/or good buttressing present. No obvious root pests or diseases.
Fair	Typical structure for species. Some minor structural defects and/or minor damage to trunk. Bark missing. Cavities could be present. Minimal or no damage to structural roots.
Poor	Major structural defects and/or trunk damaged and/or missing bark, large cavities, and/or girdling or damaged roots that are problematic.
Hazardous	Tree poses immediate hazard potential that should be rectified as soon as possible.

Form (General shape of the tree):

Category	Description
Good	Canopy full and symmetrical.
Fair	Minor asymmetry or suppression. Considered typical for species in situation.
Poor	Canopy suppressed, major asymmetry. Stump re-growth

Retention Value:

Category	Description
High	In good condition and able to respond to changes in its environment. May be of particular significance to site e.g. environmental or heritage. Tree has potential to be a long-term component of the landscape if managed appropriately. Make every effort to retain
Medium	Tree in fair condition and structure. Tree may have condition or structural problems that would require treatment. Tree could sustain changes to its environment. Tree has potential to be a medium to long-term component of the landscape if managed appropriately. Tree has yet to achieve a significant landscape impact. May be retained or removed depending on design preference
Low	Tree is in poor condition and/or poor structure that can not be rectified. Tree could not sustain dramatic or severe changes, or tree has detrimental effects on environment, eg. woody weed. Recommended for removal.

Appendix 3

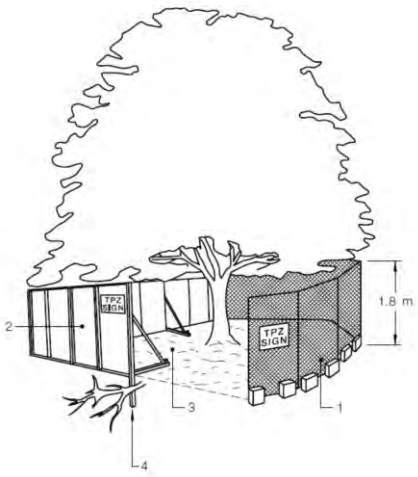
Tree Protection Guidelines

The protection and preservation of the existing trees on a development site is to be ensured by the installation of tree protection fencing set at the edge of the tree protection zones. Tree Protection fencing is to be installed prior to the commencement of any site works including demolition, excavation, delivery of materials etc.

The Tree Protection Zones will be determined by the consulting arborist in conjunction with the Site Manager, wherever possible the measures shall conform to AS4970 2009.

The actual fence specifications should be a minimum of 1.2 - 1.5 metres of chain mesh or like fence with 1.8 meter star pickets every 3-4 metres and a top line of high visibility plastic hazard tape. This fence will deter the entry of heavy equipment and vehicles and also the entry of workers and/or the public into the Tree Protection Zone. The tree protection zone shall be clearly signed on all visible sides “Tree Protection Zone – No entry without permission from site manager”

Table 1 Protection Fencing



LEGEND:
1 Chain wire mesh panels with shade cloth (if required) attached, held in place with concrete feet.
2 Alternative plywood or wooden paling fence panels. This fencing material also prevents building materials or soil entering the TPZ.
3 Mulch installation across surface of TPZ (at the discretion of the project arborist). No excavation, construction activity, grade changes, surface treatment or storage of materials of any kind is permitted within the TPZ.
4 Bracing is permissible within the TPZ. Installation of supports should avoid damaging roots.

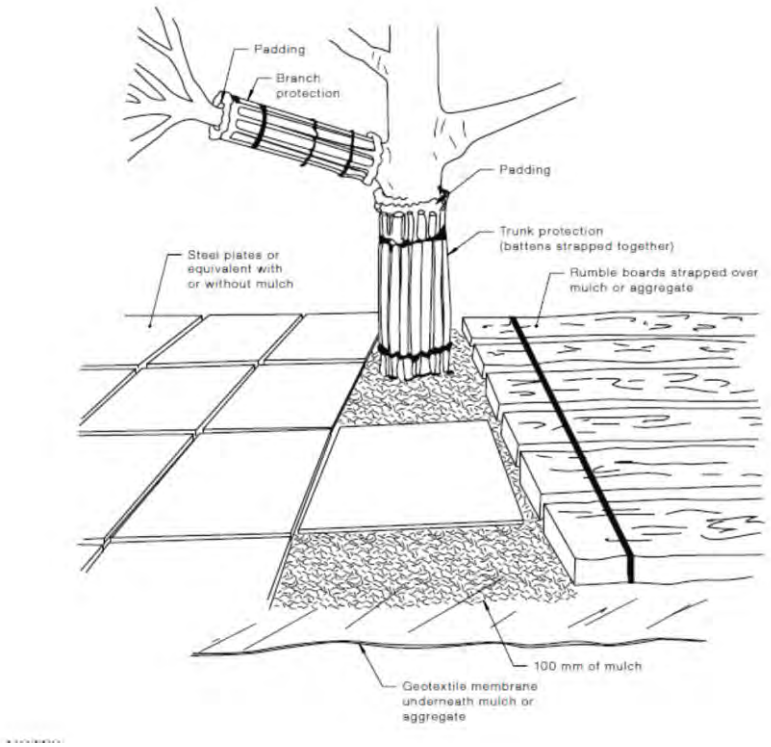
These fences should only be removed or shifted by the consent of the Responsible Authority.

The area inside this Tree Protection Zone should be mulched with a covering of approximately 100mm of woodchip mulch or like material.

If temporary access is required through a Tree Protection Zone this may be carried out using sheets of heavy plywood or like protection but should not be considered for long term requirements (see table 2).

Appendix 3

Table 2. Protection of tree during temporary access arrangement.



The following are guidelines that <u>must</u> be implemented to minimise the impact of the proposed construction works on the existing trees.

- The Tree Protection Zone is fenced and clearly marked at all times (according to the specification above).
- The consultant arborist is on-site to supervise all excavation works within the TPZ. This is more paramount if substantial roots (i.e. > 40 mm ∅) are encountered and may require pruning. Inspection will need to take place by a qualified arborist to ascertain impact on the trees and recommend follow up works if required.
- A layer of organic mulch (woodchips) to a depth of 80mm (no deeper) should be placed over all root systems (not just in the Tree Protection Zones) of trees which are to be retained to assist with moisture retention and to reduce the impact of compaction. This is particularly important where there will be constant construction vehicle traffic.
- No persons, vehicles or machinery are to enter the Tree Protection Zone without the consent of the consulting arborist or site manager.
- Any underground service installations should be bored and utility authorities should common trench where possible.
- No fuel, oil dumps or chemicals shall be allowed in or stored on the Tree Protection Zone and the servicing and re-fuelling of equipment and vehicles should be carried out away from the root zones.
- No storage of material, equipment or temporary building should take place over the Tree Protection Zone of any tree.

Appendix 3

- Nothing whatsoever should be attached to any tree including temporary services wires, nails, screws or any other fixing device.

- Supplementary watering should be provided to all trees through any dry periods during and after the construction process.

- Any pruning that is required must be carried out by trained and competent arborist who has a thorough knowledge of tree physiology and pruning methods and carry out pruning to the Australian Standard – AS 4373 – 1996 Pruning of Amenity Trees.

- All root excavation should be carried out by hand digging or with the use of 'Air-Excavation' techniques, and roots should be severed by saw cutting or with a sharp axe and not with a Backhoe or any machinery or blunt instrument.

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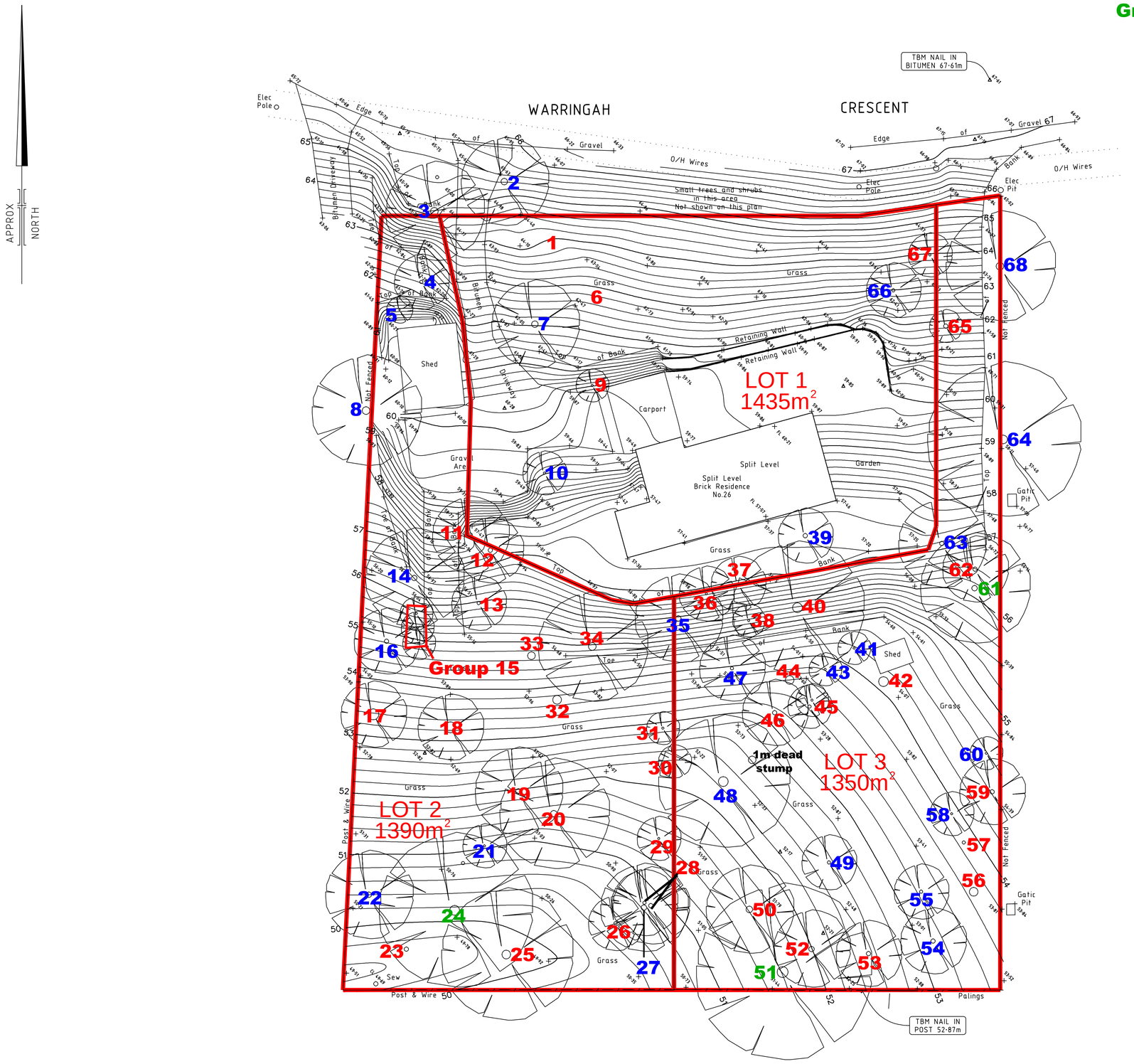
Print in Colour and at a minimum of A3

Appendix 4 Tree Nos. Plan

Red = Low Retention Value
Blue = Medium Retention Value
Green = High Retention Value



NOTATIONS

The information shown on this plan is for general design works only. Any critical dimensions should be requested independently to this plan. Webster Survey Group accepts no responsibility for any manipulation of the digital information provided in this plan by others

Whilst every effort has been made to locate all feature details within the surveyed area Webster Survey Group will not be held responsible for features hidden, obscured or under construction at the time of survey.

No underground features have been located unless specifically shown

Levels shown on this plan are to Australian Height Datum vide NILLUMBIK PM 159 (R.L. 26.490m)

Contour interval 0.2 metres

Land Subject to Easements

Refer to Title

Property boundaries have been plotted from the DCMB by best fit with existing fencing. A title re-establishment survey has not been undertaken and easements have not been identified.

REVISIONS

Version	Description	Date

JOB TITLE
26 WARRINGAH CRESCENT
ELTHAM 3095

DRAWING NAME
PROPOSED BOUNDARY LOCATION

DRAWING REFERENCE
16885C

VERSION
01

LAND DESCRIPTION
LOT 6 ON LP 58605

DATE OF SURVEY
29/10/2019

ORIGINAL SHEET SIZE
A1

SHEET No
1 of 1

SCALE
1:200

2 0 2 4 6 8
LENGTHS ARE IN METRES

DRAWN BY
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3. The author has taken care to obtain all information from reliable sources. All data has been verified insofar as possible; however the author can neither guarantee nor be responsible for the accuracy of the information provided by others not directly under the authors control.

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12. To the authors' knowledge all facts, matter and all assumptions upon which the report proceeds have been stated within the body of the report and all opinion contained within the report have been fully researched and referenced and any such opinion not duly researched is based upon the writers experience and observations.