

Date: 30/08/2024

Our Ref: BR-840824-A

BUSH FIRE ASSESSMENT

66 Larmer Street Narrandera 2700

Assessed as: Infill Development

Prepared by: Matthew Noone | BPAD Accreditation Number: BPAD-25584 (Level 3)

Site Address: 66 Larmer Street Narrandera 2700 | Lot / DP: (Lot 1/-/DP319155)

Project Description: Proposed Multi-Dwelling Housing



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REPORT NUMBER
BR-840824-A

Date: 30/08/2024

Our Ref: BR-840824-A

BAL ASSESSMENT CERTIFICATION

Provided to support the Development Application

66 Larmer Street Narrandera 2700

Prepared by: Matthew Noone | BPAD Accreditation Number: BPAD-25584 (Level 3)



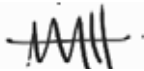
Site Address: 66 Larmer Street Narrandera 2700 | Lot / DP: (Lot 1/-/DP319155)

Project Description: Multi-Dwelling Housing

PBP Development Type: Infill Development

I hereby certify that:

1	I (Matthew Noone) am a person recognised by the NSW Rural Fire Service as a qualified consultant in bushfire risk assessment holding accreditation with the Fire Protection Association (BPAD-PD 25584).
2	Subject to the recommendations contained in the attached Bushfire Risk Assessment Report the proposed development conforms to the relevant specifications and requirements *.
*	The relevant specifications and requirements being; specifications and requirements of the document entitled Planning for Bush Fire Protection prepared by the NSW Rural Fire Service in co-operation with the Department of Planning and any other document as prescribed by s.4.14 of the Environmental Planning and Assessment Act 1979.
*	The development complies with the relevant specifications and requirements. RFS referral is not required.
3	I am aware that the Bushfire Assessment Report, prepared for the above mentioned site is to be submitted in support of a development application for this site and will be relied upon by Council as the basis for ensuring that the bushfire risk management aspects of the proposed development have been addressed in accordance with Planning for Bushfire Protection (2019).

CERTIFICATE NUMBER BR-840824-A			FPAA Accreditation Number BPAD-25584 
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DOCUMENT TRACKING

Issue Date	Issued to	Description	Version
30/08/2024	Sunrai Designs	Issued for DA.	A

DISCLAIMER and TERMS OF USE

"It should be borne in mind that the measures contained in this Standard cannot guarantee that a building will survive a bushfire event on every occasion. This is substantially due to the degree of vegetation management, the unpredictable nature of behaviour of fire, and extreme weather conditions." (AS3959 2018).

Bushfire Planning & Design cannot be held liable for the loss of life or property caused by a bushfire event. This report has considered the relevant planning instruments, bushfire constructions codes and practices applicable at the time of writing. Should additional information be provided after this report has been issued, we reserve the right to review and if necessary modify our report. Bushfire Planning and Design has no control over workmanship, buildings degrade over time and vegetation if not managed will regrow. In addition legislation and construction standards are subject to change. Due to significant variance of bushfire behaviour, we do not guarantee that the dwelling will withstand the passage of bushfire even if this development is constructed to the prescribed standards.

This report has been based on our interpretation of Planning for Bushfire Protection (2019), AS3959 (2018) and the methodology for site specific bushfire assessment. As a consultant, our view can be subjective. Our opinions may differ from the opinions provided by you the Client (or Client Representative), the Council, the RFS or another bushfire consultant. The Rural Fire Service (RFS) has a higher authority and can upon their review, increase a nominated BAL-rating or entirely reject a development proposal. Any such recommendations made by the RFS take precedence. Our role is intermediary between our Client (or Client Representative) and the consenting authority. We apply our knowledge of the relevant bushfire protection standards to provide the best possible outcome for our Client (or Client Representative), both from a bushfire safety and financial perspective. Should the RFS modify our recommendations or reject the proposal to which this report relates to we will not be held liable for any financial losses as a result. By using this document, you the Client (or Client Representative) agree to and acknowledge the above statements

Bushfire Planning and Design accepts no liability or responsibility for any use or reliance upon this report and its supporting material by any unauthorized third party. The validity of this report is nullified if used for any other purpose than for which it was commissioned. Unauthorized use of this report in any form is deemed an infringement of our intellectual property. By using this document to support your development you the Client (or Client representative) agree to these terms.

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GLOSSARY

The abbreviations that are commonly used are explained below. Not all are present in this report.

APZ	Asset Protection Zone
AS3959	Australian Standard for the Construction of a Building in a Bushfire Prone Area
BAL	Bushfire Attack Level
BCA	Building Code of Australia
BFPL	Bush Fire Prone Land
BFPLM	Map Bush Fire Prone Land Map
BFDB	Bush Fire Design Brief
BPM	Bush Fire Protection Measure
DA	Development Application
DCP	Development Control Plan
DPIE	Department Of Planning, Industry And Environment
DTS	Deemed to Satisfy
EPA ACT	Environmental Planning And Assessment Act 1979
FDI	Fire Danger Index
FFDI	Forest Fire Danger Index
GFDI	Grassland Fire Danger Index
IPA	Inner Protection Area
LEP	Local Environmental Plan
NASH	National Association of Steel Framed Housing
NCC	National Construction Code
OPA	Outer Protection Area
PBP	Planning for Bush Fire Protection
RF ACT	Rural Fires Act
RF REG	Rural Fires Regulation
NSW RFS	New South Wales Rural Fire Service
SEPP	State Environmental Planning Policy
SFPP	Special Fire Protection Purpose
SFR	Short Fire Run
SSD	State Significant Development

ASSESSMENT DETAILS

Client	Murray Nielsen		
Location	66 Larmer Street Narrandera 2700		
Title reference	(Lot 1/-/DP319155)		
LGA	Narrandera Shire		
Zoning	RU5 Village		
Development Type	Multi-Dwelling Housing		
PBP (2019) Assessment Type	Infill (Chapter 7)		
Bushfire Consultancy	Bushfire Planning and Design - Director Matthew Noone - Accreditation number BPAD-25584 (Level 3)		
Report no.	Date of Issue	BR-840824-A	30/08/2024

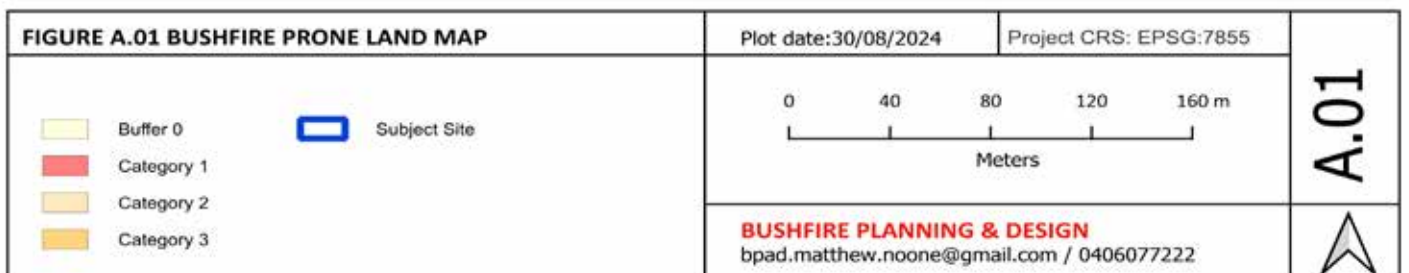
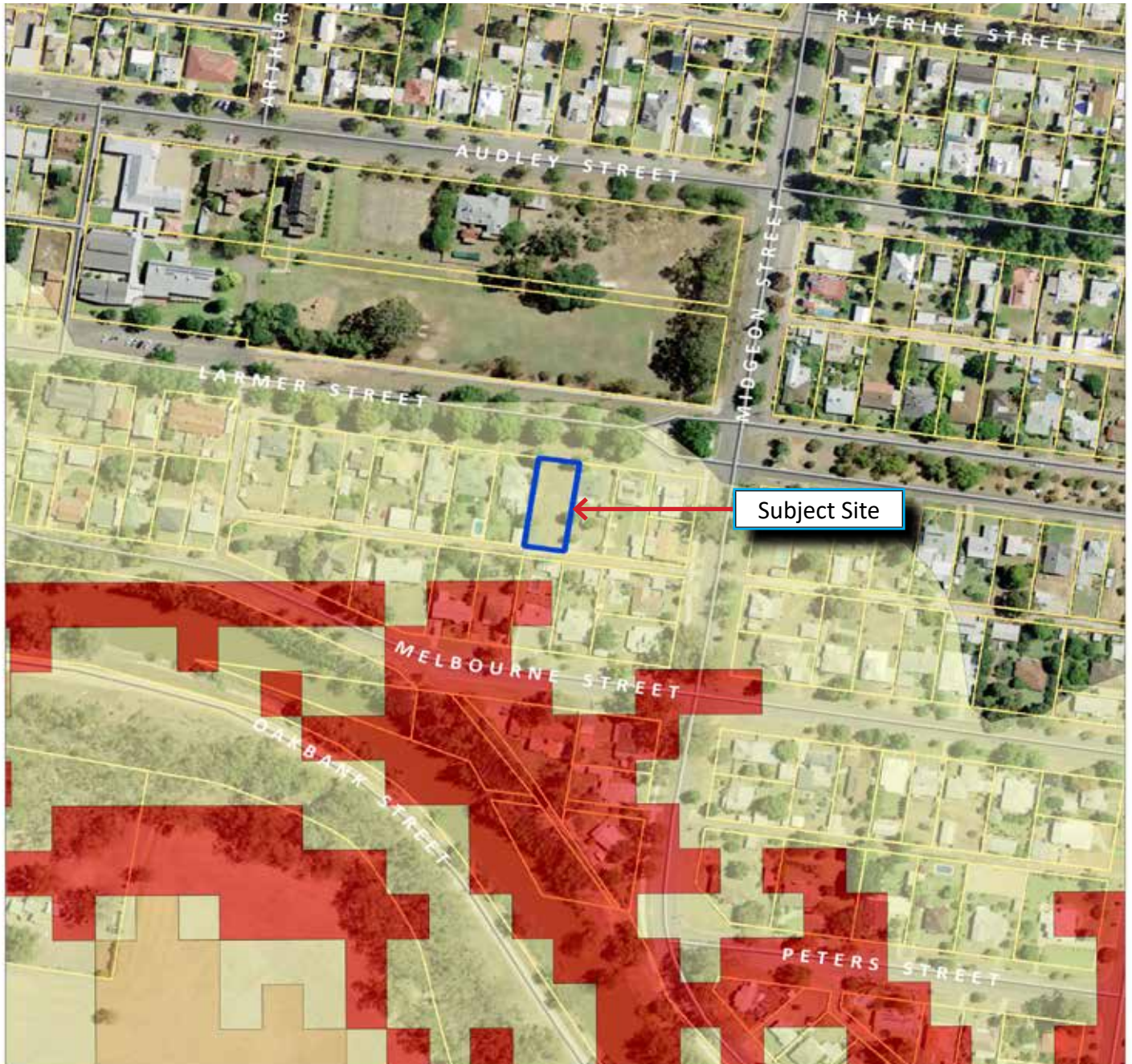
SCOPE

The first intended audience for our report is our Client and the design team. The recommendations in this report should be adopted integral to design development and prior to the DA being lodged. Additionally our recommendations are to be included in the DA consent and should be confirmed prior to the release of the Construction Certificate. Whereas our report will be used to support the development application to which this report relates, our report is not necessarily written for RFS or Council and the information within is to be considered in the same context as a set of specifications that if employed will achieve compliance with PBP.

Our report provides an assessment of the Bushfire Attack Level (BAL) and outlines the Bushfire Protection Measures (BPM's) that must be incorporated into the development design to ensure compliance with AS3959 (2009) Construction of Buildings in Bushfire Prone Areas and the New South Wales Rural Fire Service document Planning for Bushfire Protection (2019).

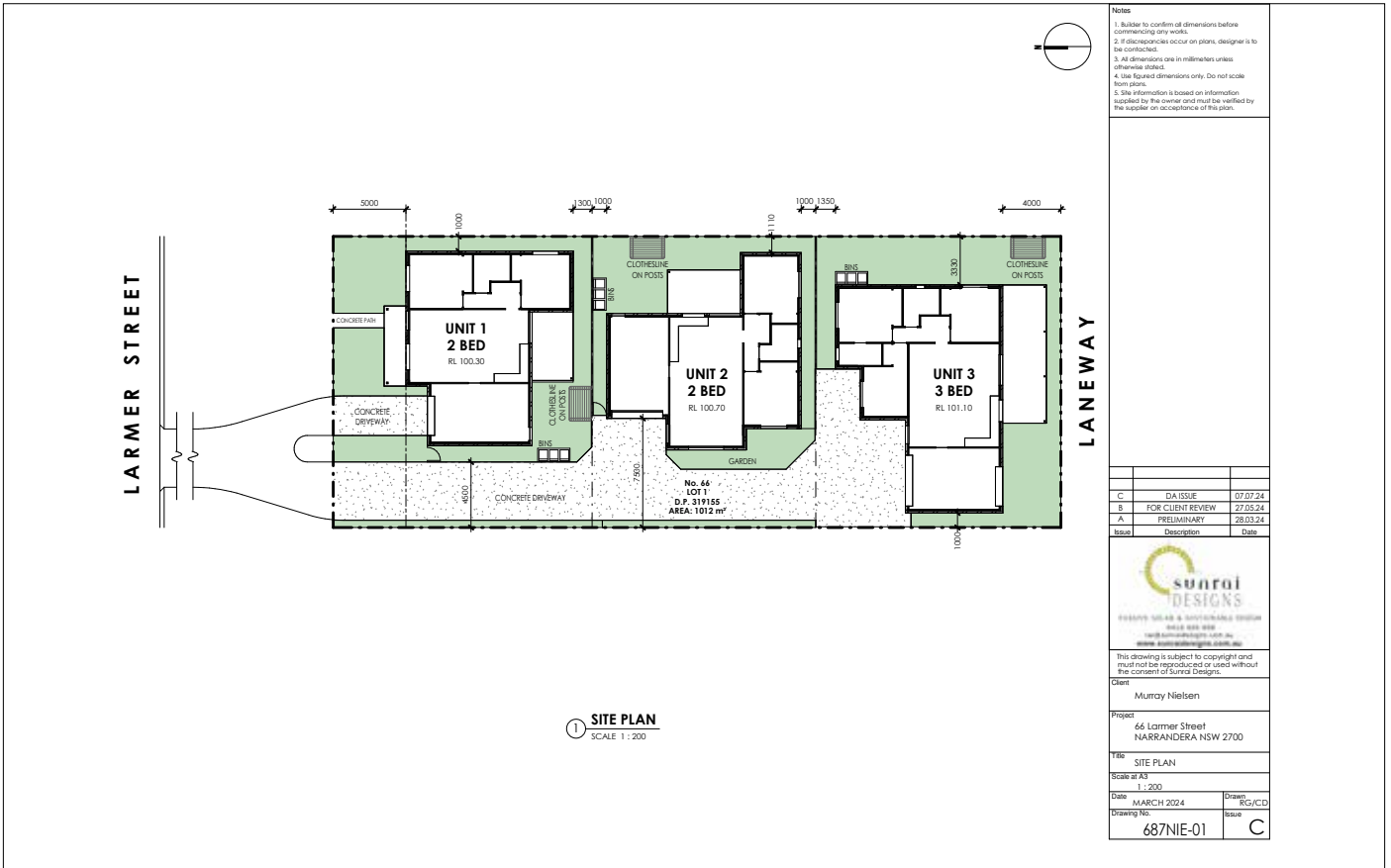
A.01 BUSHFIRE PRONE LAND

The subject site whether in whole or part is recorded as bushfire affected on a relevant map certified under Section 10.3 (2) of the Environmental Planning and Assessment Act 1979 (Refer figure A.01). All developments on certified bushfire prone are required to address bushfire as per 4.14 Environmental Planning and Assessment Act 1979.



A.02 DEVELOPMENT PROPOSAL

The development relates to the construction of three dwellings on a vacant allotment.



Concept Drawing

A.03 REGULATORY FRAME WORK

The relevant legislative instruments applicable to the subject development are outlined below.

PRE-DEVELOPMENT CONSENT

- 10.3 (2) of the Environmental Planning and Assessment Act 1979.
- 4.14 Environmental Planning and Assessment Act 1979
- Planning for Bush Fire Protection (2019).

POST-DEVELOPMENT CONSENT

- National Construction Code (2022).
- AS3959 (2018) Construction of Buildings in Bush Fire Prone Areas.

A.04 SITE LOCATION, DESCRIPTION AND POTENTIAL BUSHFIRE THREATS

The subject site is located in Narrandera which is within the Narrandera Shire Local Government Area (LGA). The site is surrounded by managed residential curtilage. A water canal lined by a narrow band of riparian vegetation occurs to the south-west of the site. The narrow band of vegetation adjoining the northern side of the canal is assessed as low hazard for the purpose of the bushfire assessment.

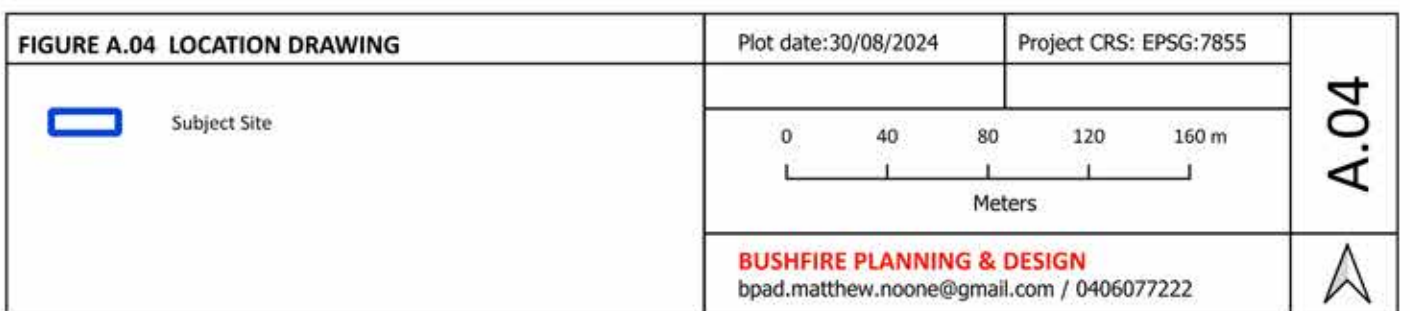
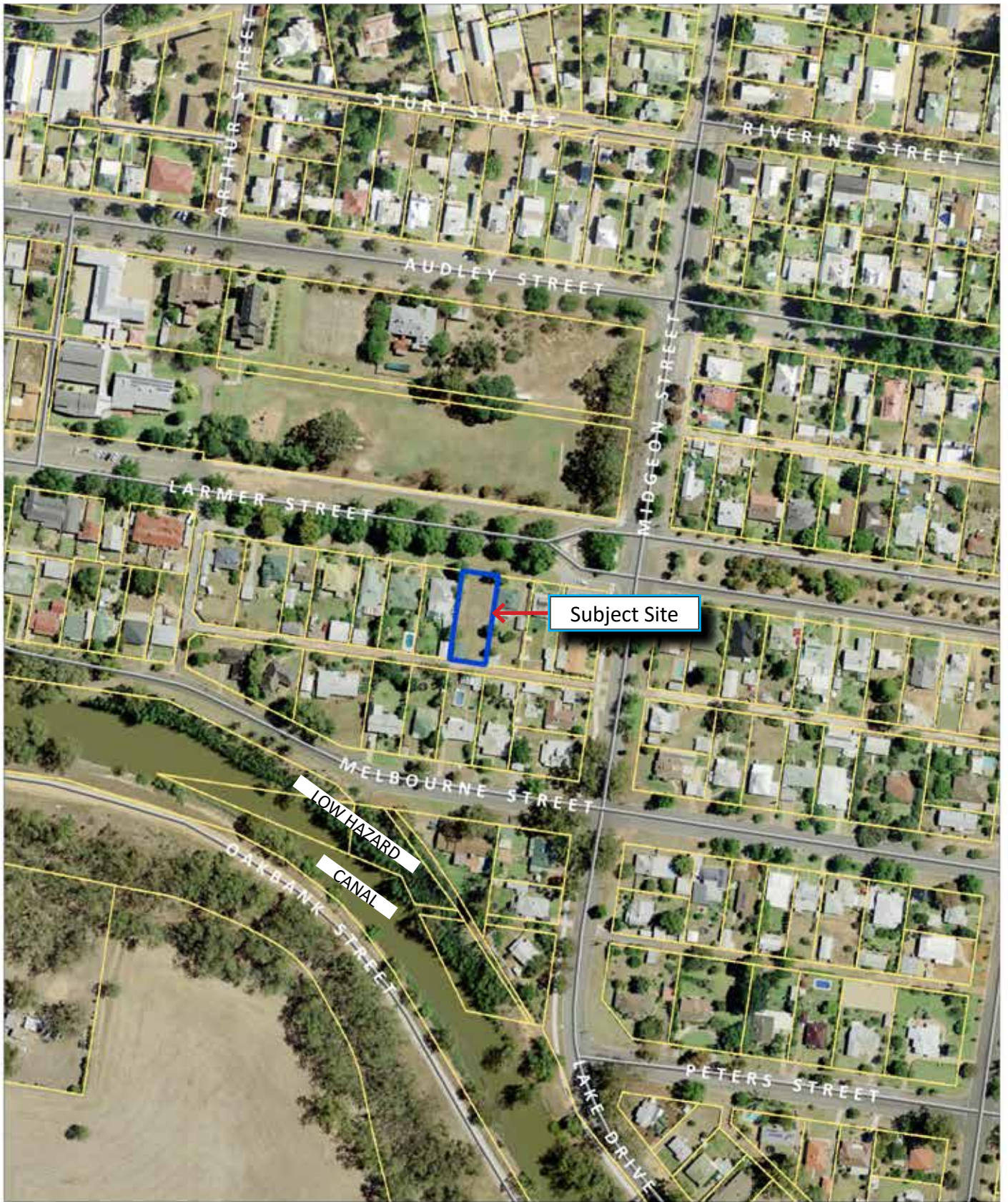
A.05 LAND USE, ZONING AND PERMISSIBILITY

The subject site is zoned RU5 Village.



LAND ZONING LEGEND





A.06 SIGNIFICANT ENVIRONMENTAL FEATURES

Our BAL-assessment in Part-B of this report has considered the environmental features that are relevant to our assessment. There are no additional significant environmental features within the 140m study area that would influence our opinion of the assessed Bushfire Attack Level.

A.07 DETAILS OF ABORIGINAL HERITAGE

To our knowledge the site is not associated with any items of Aboriginal heritage.

A.08 THREATENED SPECIES, COMMUNITIES AND CRITICAL HABITATS

The subject site is not mapped by the Department of Planning, Industry and Environment (DPIE) under Part 7 of the Biodiversity Conservation Act 2016 (BC Act) as having Biodiversity Values (BV).

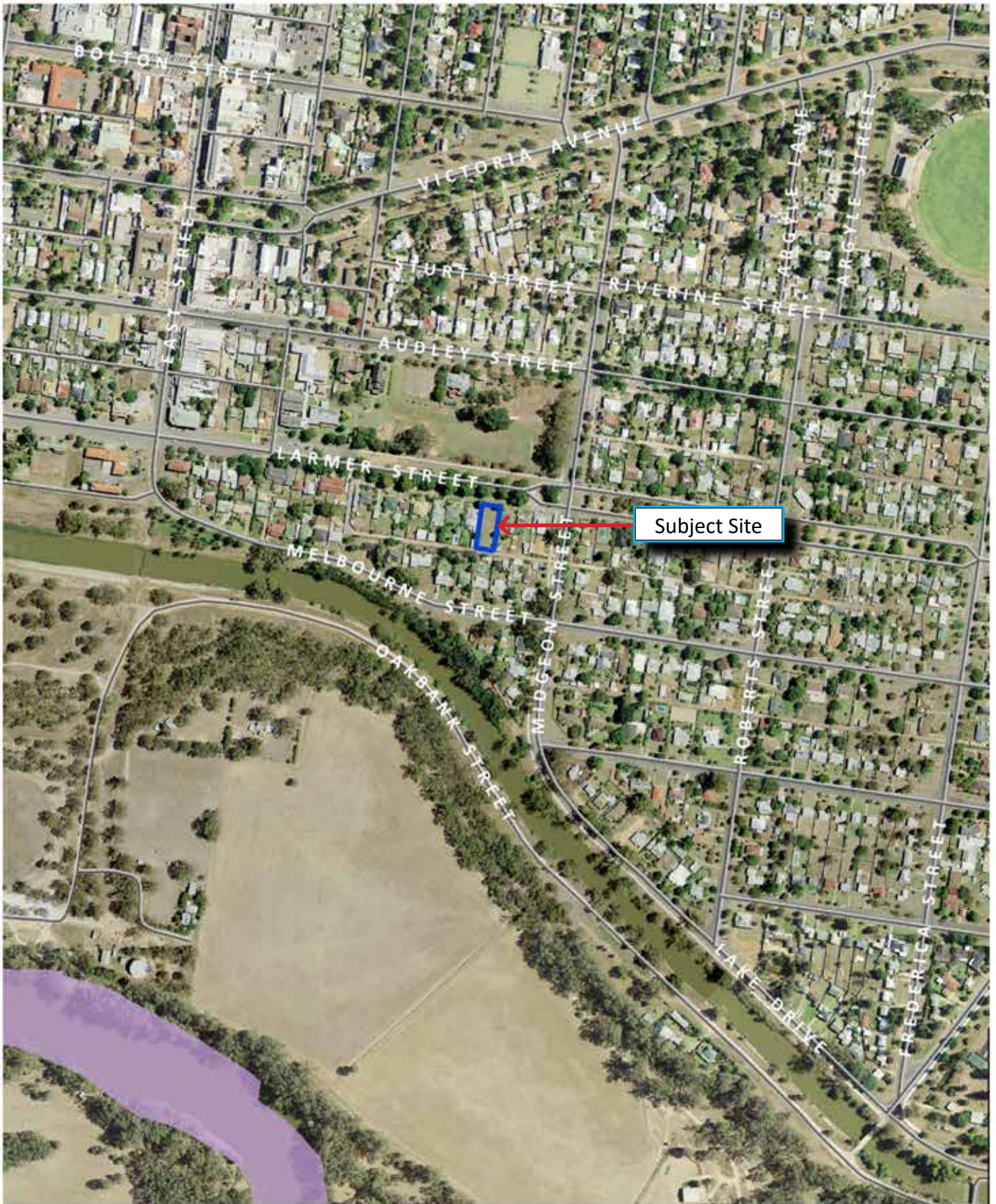



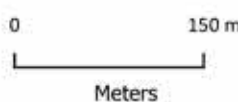


FIGURE A.09 BIODIVERSITY	Plot date:30/08/2024	CRS: EPSG:7855	A.09 
<p>BIODIVERSITY VALUES</p> <ul style="list-style-type: none">  Biodiversity Values  Biodiversity Values added in the last 90 days <p>The BV Map has been prepared by the Department of Planning, Industry and Environment (DPIE) under Part 7 of the Biodiversity Conservation Act 2016 (BC Act).</p>	 <p>Meters</p>	<p>BUSHFIRE PLANNING & DESIGN bpad.matthew.noone@gmail.com / 0406077222</p>	

A.09 REPORT LIMITATIONS

This bushfire assessment is developed based on the current accepted standards. The severity of bushfire attack is reliant on many variables. Due to these variables the bushfire attack on any given day could be higher due to the limitations outline below. The bushfire protection measures contained in this document does not guarantee that loss of life, injury or property damage will not occur during a bush fire event.

Fire Danger Index

It may be possible that days of higher Fire Danger Index (FDI) may be experienced than the FDI levels used for assessment. This may result in fire situations where conditions challenge survivability of buildings and their occupants.

Fuel Load

The fuel loads and vegetation classes used in our assessment are based on the State Vegetation Mapping and Comprehensive Fuel Loads based on The University of Wollongong's (UoW) Fuels Modelling Project. Fuel loads in some areas may be higher than those used in this document. This can influence bush fire behaviour and the potential impact on property. The DTS APZs in PBP (2019) are based on the UoW fuel loads and are therefore suitable for design purposes.

Climate change

Climate change has led to longer, more intense fire seasons and an increase in the average number of elevated fire weather days, as measured by the Forest Fire Danger Index (FFDI). Last year saw the highest annual accumulated FFDI on record. Australia was the first country in the world to report the impact of climate change on bushfires through CSIRO's work to model the increase in high fire danger days.

Legislative Standards

Recommendations relating to development of bushfire prone land are a directive through the legislative standards applicable at the time of writing. Legislative standards change over time. All recommendations made are based on the current standards. We cannot guarantee that the current standards will be suitable in comparison to future standards.

Maintenance

After the issuance of an Occupancy Certificate (OC) it is imperative that the bushfire protection recommendations are carried out for the life of the development. Failure to maintain a property in accordance with the RFS standards for Asset Protection Zones could lead to the failure of the building, property and life. We have no control over the extent of how well a property will be maintained post OC.

B.01 INTRODUCTION

For the purpose of this bushfire assessment, the vegetation is required to be described to a distance of 140m from the boundary and the slope to 100m from boundary. Vegetation type and slope under vegetation are the factors that will significantly affect bushfire behaviour.

‘Research has shown that 85% of houses are lost in the first 100m from bushland and that ember attack is a significant form of attack on properties’ (RFS 2006).

B.02 SLOPE DETERMINATION

The effective slope has been assessed for a distance of at least 100m from the proposed development. The slope data has been calculated from a 1m LiDAR Digital Elevation Model (DEM). The source data sets have been captured to standards that are generally consistent with the Australian ICSM LiDAR Acquisition Specifications which require a fundamental vertical accuracy of at least 0.30m (95% confidence) and horizontal accuracy of at least 0.80m (95% confidence). The slope arrows indicated in figure A represent the slope calculated across the length of the arrow direct from the digital elevation model.

B.03 HOW THE VEGETATION COVER IS MEASURED

The distance to vegetation is measured from the extent of vegetation cover interpolated from high resolution aerial imagery. For the areas beyond the line of sight we have defaulted to interpreting the extent of vegetation cover high resolution aerial image.

B.04 PREDOMINANT VEGETATION FORMATIONS

This assessment considers the vegetation within the site and if relevant, vegetation external to the site boundaries. Where mixes of vegetation formations are located together, the vegetation formation providing the greater hazard (highest radiant heat load) shall be used to determine the BAL and APZ. The combination of vegetation and slope that yields the worst case scenario shall be used (A1.2 PBP 2019). The vegetation mapping provides an overview of the types of vegetation proximal to the site. The vegetation mapping shown in Figure B.04 is not intended to be conclusive.

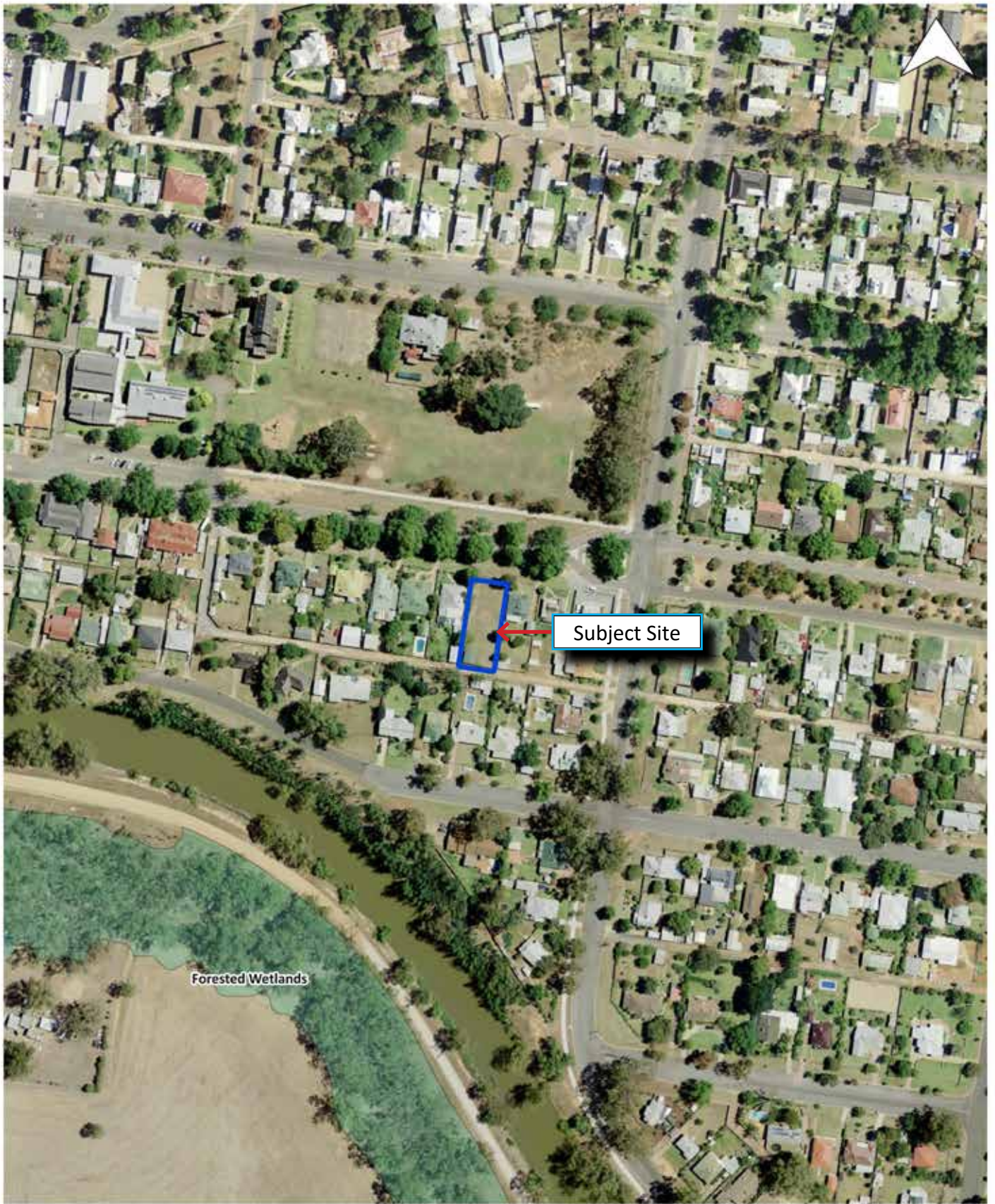


FIGURE B.04 VEGETATION FORMATIONS

Subject Site
 Forested Wetlands

CRS: EPSG:7855

Plot date: 30/08/2024

0 Meters 100 m

BUSHFIRE PLANNING & DESIGN
 projects@bpad-nsw.com / 0406077222

B.05 BUSHFIRE ATTACK LEVEL (BAL) ASSESSMENT.

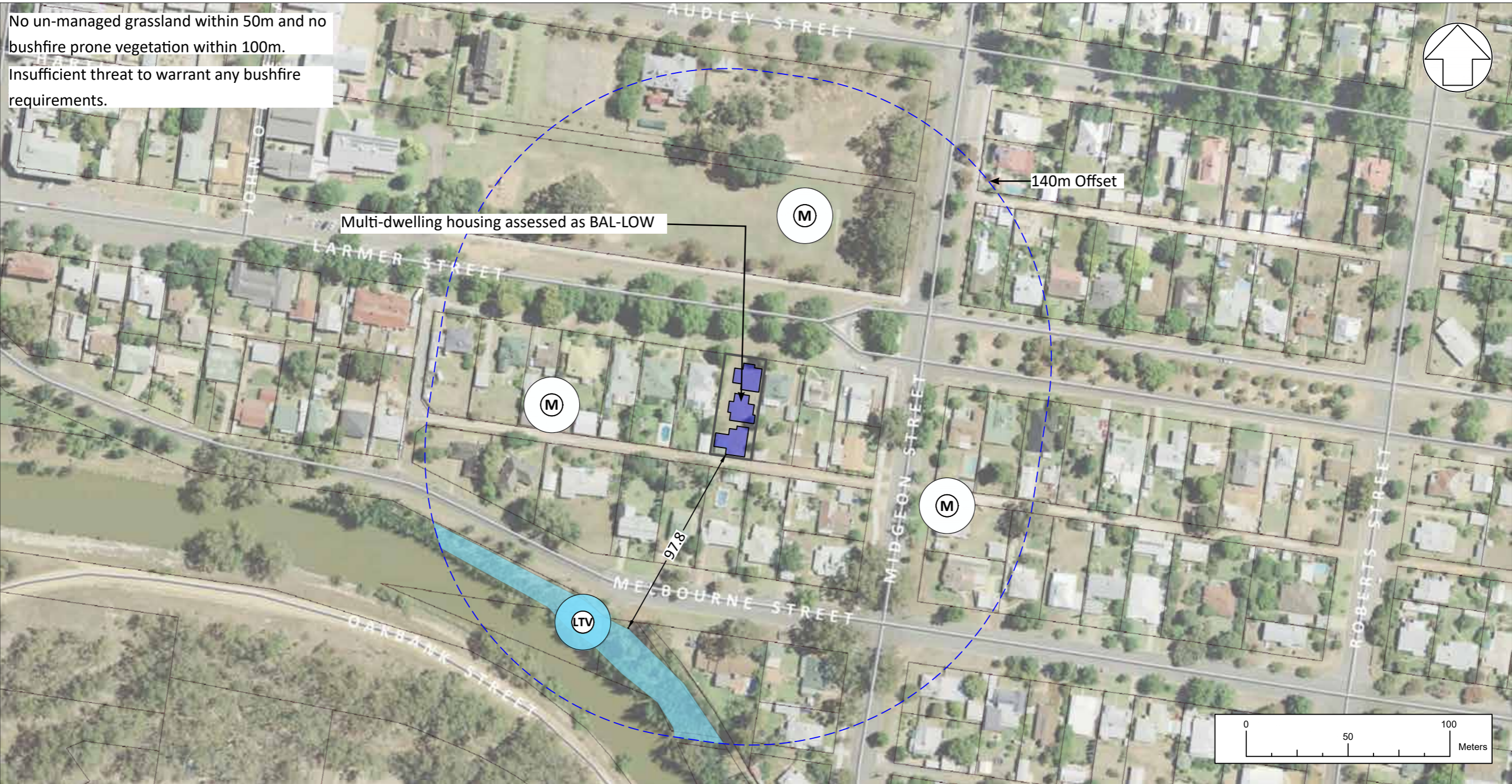
The site is surrounded by managed residential curtilage. A water canal lined by a narrow band of riparian vegetation occurs to the south-west of the site. The narrow band of vegetation adjoining the northern side of the canal is assessed as low hazard vegetation. As such, there is no un-managed grassland within 50m and no other bushfire prone vegetation within 100m of the development.

Based on the parameters identified in Table 1 below and shown in Figure A, the proposed multi-dwelling housing is assessed as having a Bushfire Attack Level of BAL-LOW.

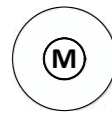
TABLE 1 (To be read in conjunction with Figure A).					
LGA = Narrandera Shire Council				Forest Fire Danger Index = FDI 80	
ASPECT ¹	Vegetation Class ²	Max Effective Slope ³	Site slope ³	DTV ⁵	BAL-Rating
N, S, E, W	Managed land or low hazard vegetation				BAL-LOW
Abbreviations					
AOD All other directions		EML Extent of managed land		NVC Narrow vegetation corridor	

¹	<i>Cardinal direction from each proposed building facade based on grid north.</i>
²	<i>Vegetation Classifications are as described in PBP (2019) A1.2.</i>
³	<i>Site slope is calculated from 1m LiDAR contours.</i>
⁴	<i>Minimum APZ required stated as Acceptable Solutions within Table 1.12.2 and A1.12.5. PBP (2019).</i>
⁵	<i>Distance to Vegetation (DTV) Actual dimensional setback from the face of the building to the assessed vegetation. Achieved Asset Protection Zone (APZ) or extent of managed land (EML).</i>
⁶	<i>Where the direct line of sight between the proposed building and assessed vegetation is obstructed (by a wall or building) the assessed rating can be lowered by one BAL-rating (PBP 2019, s. A1.8).</i>
⁷	<i>Remnant bushland and narrow vegetation corridors (NVC) as stated in PBP (2019) s.A1.11 can be assessed as rainforest as a simplified approach or be assessed as Short Fire Run using method 2 (AS3959).</i>
⁸	<i>Deeming provisions for grassland s.7.9 PBP (2019).</i>

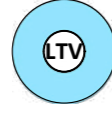
No un-managed grassland within 50m and no bushfire prone vegetation within 100m.
 Insufficient threat to warrant any bushfire requirements.



VEGETATION KEY (solid)



Managed Land



Low Threat Vegetation
 PBP (2019) A1.10

DRAWING LEGEND

Site Boundary ———

Proposed Building

BUSHFIRE PLANNING & DESIGN

projects@bpad-nsw.com

0406077222

Figure:

A

PART C BUSHFIRE PROTECTION MEASURES / RECOMMENDATIONS

BPMs can mitigate the impact of bush fire attack on people and assets. The types of protection measures include APZs, access, landscaping, water supply, building design and construction and emergency management arrangements. These measures assist building survival during a bush fire. They also contribute to the safety of firefighters and members of the community occupying buildings during the passage of a bush fire front.

As there is no un-managed grassland within 50m and no other bushfire prone vegetation within 100m of the development, the proposed multi-dwelling housing is assessed as having a Bushfire Attack Level of BAL-LOW. As such, there is insufficient threat to warrant any specific BPMs.

C.01 ASSET PROTECTION ZONES (APZs)

There is insufficient threat to warrant any specific asset protection zones (APZ).

C.02 CONSTRUCTION

There is insufficient threat to warrant any specific level of construction with regards to AS3959 (2018).

C.03 ACCESS

There is insufficient threat to warrant provision for RFS access.

C.04 WATER

There is insufficient threat to warrant the provision of additional water for fire fighting.

C.05 ELECTRICITY AND GAS

There is insufficient threat to warrant any specific bushfire requirements for the provision of electrical and gas supply.

In the event that Council or the NSW Rural Fire Service modifies our recommendations, this report should no longer be referred to. The bushfire requirements as stated in the DA Consent conditions will take precedence. We strongly recommend the Applicant cross references the bushfire conditions within the DA consent and the recommendations within Part C of our report and alert us to any discrepancies prior to any works starting on site.

PART D SUMMARY

The development relates to the construction of three dwellings on a vacant allotment.

The development is captured under Section 4.14 of the Environmental Planning and Assessment Act 1979; Consultation and development consent – certain bush fire prone land. For the purpose of bushfire assessment the development is considered infill development as described in the New South Wales Rural Fire Service document Planning for Bushfire Protection (2019).

The subject site is located in Narrandera which is within the Narrandera Shire Local Government Area (LGA). The site is surrounded by managed residential curtilage. A water canal lined by a narrow band of riparian vegetation occurs to the south-west of the site. The narrow band of vegetation adjoining the northern side of the canal is assessed as low hazard for the purpose of the bushfire assessment.

As there is no un-managed grassland within 50m and no other bushfire prone vegetation within 100m of the development, the proposed multi-dwelling housing is assessed as having a Bushfire Attack Level of BAL-LOW. As such, there is insufficient threat to warrant any specific BPMs.

In the event that Council or the NSW Rural Fire Service has any questions in relation this report please get in contact to discuss.

Report prepared by: **Bushfire Planning and Design**
Author: Christiane Turner

Reviewed: Matthew Noone



Bushfire Consultant
BSc (Wildlife Conservation Biology) Hons



D.01 REFERENCES

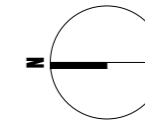
AS3959 (2018)	Australian Standard, Construction of buildings in bushfire-prone areas, AS 3959, Third edition 2018 Standards Australia International Ltd, Sydney.
BCA (2019)	Building Code of Australia 2019, Building Code of Australia, Australian Building Codes Board, Canberra 2019.
EPA Act (1979)	Environmental Planning and Assessment Act 1979, NSW Government, NSW, legislation found at www.legislation.nsw.gov.au
Keith (2004)	Keith, D.A. (2004), Ocean shores to desert dunes: The Native Vegetation of New South Wales and the ACT. NSW Department of Environment and Conservation (2004).
PBP (2019)	Planning for Bushfire Protection, a Guide for Councils,Planners, Fire Authorities, Developers and Home Owners. Rural Fire Service 2019, Australian Government Publishing Service, Canberra.
RFS (2015)	Rural Fire Service, Guide For Bush Fire Prone Land Mapping, Version 5b.

D.02 APPENDICES

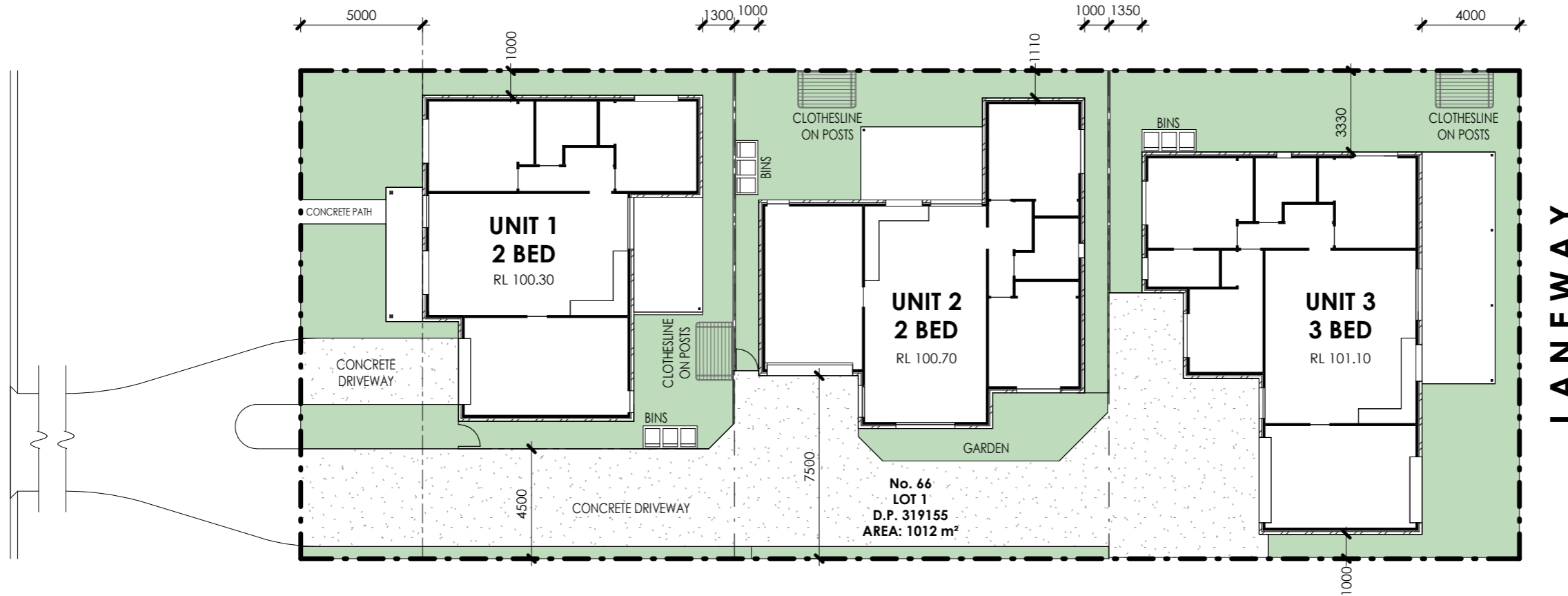
Appendix A - Client Supplied Drawings.

APPENDIX A - CLIENT SUPPLIED DRAWINGS

LARMER STREET



- Notes**
1. Builder to confirm all dimensions before commencing any works.
 2. If discrepancies occur on plans, designer is to be contacted.
 3. All dimensions are in millimeters unless otherwise stated.
 4. Use figured dimensions only. Do not scale from plans.
 5. Site information is based on information supplied by the owner and must be verified by the supplier on acceptance of this plan.



1 **SITE PLAN**
SCALE 1 : 200

Issue	Description	Date
C	DA ISSUE	07.07.24
B	FOR CLIENT REVIEW	27.05.24
A	PRELIMINARY	28.03.24

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DESIGNS

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Client
Murray Nielsen

Project
66 Larmer Street
NARRANDERA NSW 2700

Title
SITE PLAN

Scale at A3
1 : 200

Date
MARCH 2024

Drawn
RG/CD

Drawing No.
687NIE-01

Issue
C