
TOWN PLANNING REPORT

Statement of Environmental Effects

Development Application for a proposed subdivision to
create two Torrens title lots

Lot 6 DP 701105
No. 13 Palm Avenue, Mullumbimby

JOE DAVIDSON
TOWN PLANNING STUDIO

7 February 2024

Table of Contents

1.0	Introduction	1
2.0	Description of the site.....	2
3.0	Description of the proposal.....	4
4.0	Statutory considerations	5
4.1	NSW Environmental Planning and Assessment Regulation 2021	5
4.2	Section 1.7 of the Environmental Planning and Assessment Act 1979	5
4.3	Matters for Consideration under Section 4.15 of the Environmental Planning & Assessment Act 1979.....	6
4.3.1	Section 4.15(1)(a)(i) The Provisions of any Environmental Planning Instrument	6
4.3.2	Section 4.15(1)(a)(ii) The Provisions of any Draft Environmental Planning Instrument.....	11
4.3.3	Section 4.15(1)(a)(iii) The Provisions of any Development Control Plans	11
4.3.4	Section 4.15(1)(b) The likely Impacts of the Proposed Development	20
4.3.5	Section 4.15(1)(c) Suitability of the Site for the Proposed Development.....	21
4.3.6	Section 4.15(1)(e) The Public Interest	22
5.0	Conclusion.....	22

Annexures

- A. Survey Plan
- B. Bush Fire Assessment Report
- C. Development Plans

1.0 Introduction

This Town Planning Report includes a Statement of Environmental Effects to accompany a Development Application to Byron Shire Council to subdivide an existing urban allotment into two Torrens title lots.

The following sections of this report relate to the matters summarised below:

Section 2 – provides a description of the development site.

Section 3 – provides a description of the proposed development.

Section 4 – provides consideration of the proposed development having regards to the statutory requirements applying to the site.

Section 5 – provides a conclusion to this report.

In addition to these sections, Annexures include documentation of relevance to the proposed development and its site, including the plans of the proposed development. Figures are included throughout the document to provide details of the development and the development site.

This Statement of Environmental Effects has been prepared in consideration of the form approved by the Planning Secretary and published on the NSW Planning Portal, which requires a Statement of Environmental Effects to document the following, where relevant to the proposal:

- a. the environmental impacts of the development.
- b. how the environmental impacts of the development have been identified.
- c. the steps to be taken to protect the environment or to lessen the expected harm to the environment.
- d. any matters required to be indicated by any guidelines issued by the Planning Secretary.
- e. drawings of the proposed development in the context of surrounding development, including the streetscape.
- f. development compliance with building heights, building height planes, setbacks and building envelope controls (if applicable) marked on plans, sections and elevations.
- g. drawings of the proposed landscape area, including species selected and materials to be used, presented in the context of the proposed building or buildings, and the surrounding development and its context.
- h. if the proposed development is within an area in which the built form is changing, statements of the existing and likely future contexts.
- i. photomontages of the proposed development in the context of surrounding development.
- j. a sample board of the proposed materials and colours of the facade.
- k. detailed sections of proposed facades.
- l. if appropriate, a model that includes the context.

Note on the use of this document

This document has been prepared for the use of Byron Shire Council, as the consent authority, for determining a Development Application for carrying out development on the site. The document is to be used to assist in the assessment of a Development Application and is not intended to be used for any other purpose. This document is protected by copyright.

2.0 Description of the site

General

The proposed development relates to a single allotment of land that is formally described as Lot 6 in Deposited Plan 701105. The property is located at No. 13 Palm Avenue, Mullumbimby. The allotment has an irregular configuration with a land area of 2,529 square metres. The property gains access from Palm Avenue to the west with a frontage 16 metres. The land falls up to 3.5 metres from the street frontage in the west towards the rear property boundary to the east.

Refer to Figure 1 for a Locality Plan and to Figure 2 for an Aerial Photograph of the Site and Surrounds. A Survey Plan is provided within the Annexures of this report.

Improvements and Land Uses

The allotment is currently improved by a dwelling house and ancillary structures. Vehicle access to the dwelling is from Palm Avenue via an informal driveway over an existing kerb crossing.

Zoning

The property is located within the R2 Low Density Residential Zone under Byron Local Environmental Plan 2014.

Surrounding Land Uses

Residential lots containing single and double storey dwellings adjoin the subject site to the south-west, south and north-west. Council land and Chinbible Creek adjoins to the east. Residential lots are located on the opposite side of Chinbible Creek.

Services

The allotment has access to the following services:

- Water Supply – the property has access to Council’s reticulated water supply.
- Sewerage Connection – the property has a connection point to Council’s sewer network. A sewer main passes through the lot.
- Telecommunications – provided to the allotment via Telstra/NBN infrastructure.
- Electricity – accessible from overhead transmission lines administered by Essential Energy.
- Stormwater drainage – stormwater drains to Chinbible Creek.
- Waste and Recyclables Collection – available with roadside collection.

Constraints

Mapping by NSW Planning and Environment indicates that the property is within a flood area and is affected by bush fire constraints. Despite a sewer main passing through the property, no easements are registered within the allotment as part of Deposited Plan 701105.

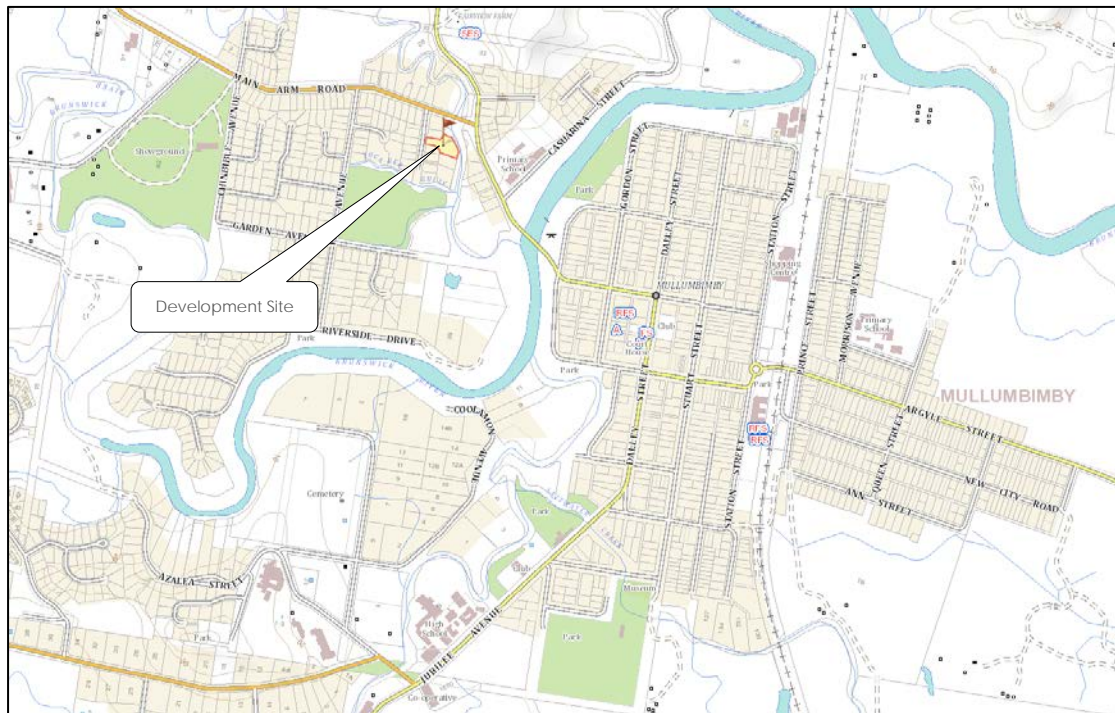


Figure 1 – Locality Plan (NSW LPI)

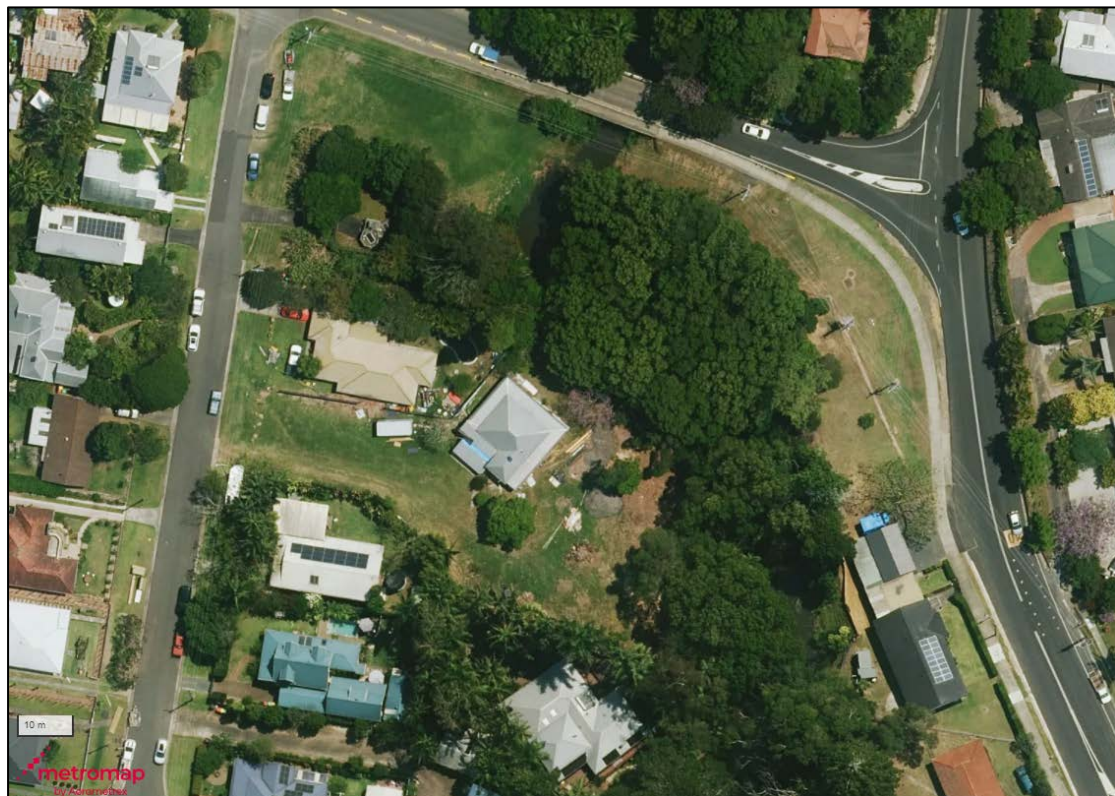


Figure 2 – Aerial Photograph of Site (Byron Shire Council)

3.0 Description of the proposal

Development consent is sought to subdivide the 2,529 square metre property into two Torrens title allotments. The proposed subdivision seeks to establish Lot 1 of 1,322 square metres (in the north of the site) and Lot 2 of 1,207 square metres (in the south of the site). Proposed Lot 1 encompasses the existing dwelling house. Proposed Lot 2 will be vacant of development.

Vehicle access to both of the proposed allotments is to be via a new shared driveway from Palm Avenue. An existing kerb crossing will be widened to meet Council's requirements. A concrete crossover and driveway is proposed within a reciprocal right of carriageway that extends into the property.

New services are proposed per the concept plans provided within the Annexures of this Town Planning Report. No changes are proposed to the existing parking arrangements for the established dwelling. Full engineering details of access and service provision will be provided as part of the subsequent Subdivision Works Certificate application.

Refer to the Annexures of this report for plans of the proposed development prepared by Town Planning Studio.

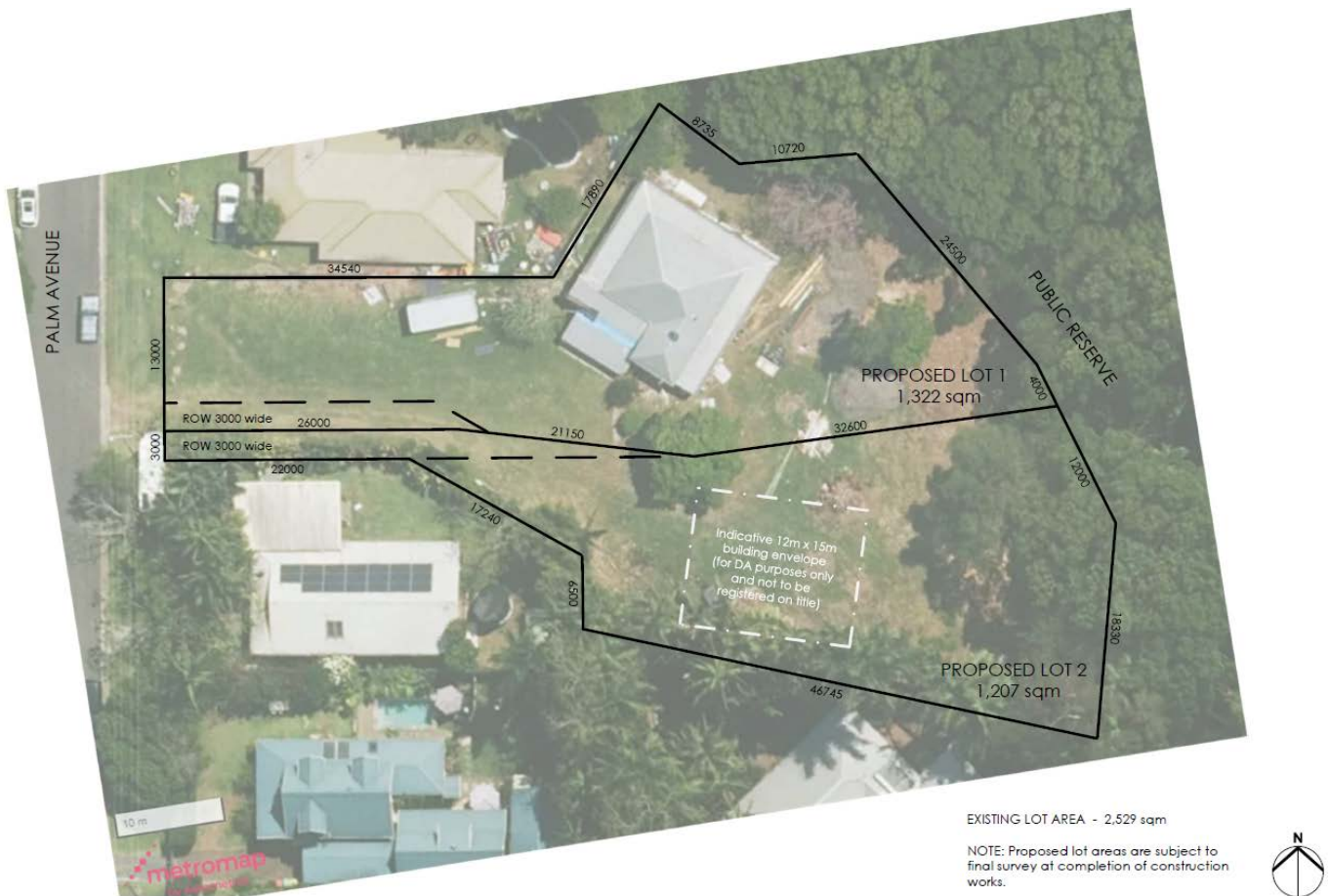


Figure 3 – Proposed Lot layout (Town Planning Studio)

4.0 Statutory considerations

4.1 NSW Environmental Planning and Assessment Regulation 2021

The proposal does not raise any significant issues under the NSW Environmental Planning and Assessment Regulation 2021.

4.2 Section 1.7 of the Environmental Planning and Assessment Act 1979

Section 1.7 of the EP&A Act 1979 provides that the Act has effect subject to the provisions of Part 7 of the Biodiversity Conservation Act 2016 and Part 7A of the Fisheries Management Act 1994 that relate to the operation of this Act in connection with the terrestrial and aquatic environment.

As the proposed development does not include any native vegetation removal works, no impacts arise in relation to the on the Biodiversity Conservation Act 2016 or the Fisheries Management Act 1994.



Figure 4 – Biodiversity Values Mapping (NSW Planning & Environment)

4.3 Section 100B of the Rural Fires Act 1997

The image below confirms that the site of the proposed development is located within a bush fire area. Refer to the Annexures of this Town Planning Report for a Bush Fire Assessment Report prepared by Bush Fire Certifiers.



Figure 5 – Bush fire hazard mapping (NSW Planning & Environment)

4.4 Matters for Consideration under Section 4.15 of the Environmental Planning & Assessment Act 1979

4.3.1 Section 4.15(1)(a)(i) The Provisions of any Environmental Planning Instrument

SEPP (Resilience and Hazards) 2021: Chapter 4 Remediation of land

The subject allotment was registered as part of Deposited Plan 701105 on 18 January 1984. The site contains an established dwelling house. The land has had continuous residential usage for over 50 years. The proposed development comprises the subdivision of the lot for continued residential use. The property is within an R2 Low Density Residential zone and is not known to have had any contaminating land uses. No contamination indicators were identified on site. The nature of the proposal and the context of the site are such that further assessment of contaminated land is not warranted as part of this Development Application.

Byron Local Environmental Plan (LEP) 2014

LEP 2014 Land Use Table – Zone R2 Low Density Residential Zone

The site is located within the R2 Low Density Residential Zone under Byron Local Environmental Plan 2014. Subdivision is permitted with the consent of Council in the zone via Clause 2.6. The Objectives of the zone are as follows:

- To provide for the housing needs of the community within a low density residential environment.
- To enable other land uses that provide facilities or services to meet the day to day needs of residents.

The existing dwelling within the site will be retained. The proposed subdivision will create two allotments that exceed the prescribed minimum lot size and will contribute to the housing needs of the community in a low density residential environment.

The proposed development is consistent with the objectives of the R2 Low Density Residential Zone.

LEP 2014 Clause 2.6 – Subdivision consent requirements

Clause 2.6 provides that land to which Byron LEP 2014 applies may be subdivided, but only with development consent. This application seeks development consent for the purpose of subdividing the subject property.

LEP 2014 Clause 4.1 – Subdivision consent requirements

This clause provides that a proposed lot must not be less than the minimum lot size shown on the Lot Size Map. The Lot Size Map prescribes that the minimum lot size for land in the R2 Low Density Residential is 600 square metres. Each of the proposed lots achieves this lot sizes.

LEP 2014 Clause 5.21 – Flood Planning

The subject property is mapped within Byron Shire Council's web portal as being impacted by flooding in a 1 in 100 year event. Refer to the Survey Plan provided within the Annexures of this Town Planning Report show that the existing dwelling within the site has a floor level of RL 6.7m AHD. The levels of the land in the vicinity of the future building footprint are between 5.89m and 6.06m AHD. Condition No. 13 of Development Consent No. 10.2022.180.1 (for a nearby property) nominates a Flood Planning Level of 5.98m AHD for the locality. On this basis, it is anticipated that the future dwelling construction within Proposed Lot 2 can easily meet the Flood Planning Level with an appropriate design. The requirements of Clause 5.21 are set out in the table below with a comment provided in relation to each:

Objectives	Comment
i. to minimise the flood risk to life and property associated with the use of land,	Future development can be designed in response to the flood impacts of the locality. The Flood Planning Level for the locality can easily be achieved within this site to minimise risk to life and property.
ii. to allow development on land that is compatible with the flood function and behaviour on the land, taking into account projected changes as a result of climate change,	The proposal is submitted with recognition that this clause specifically allows for development that is compatible with flood function and behaviour. Future development will be designed to meet applicable flood controls.
iii. to avoid adverse or cumulative impacts on flood behaviour and the environment,	The proposal will not result in adverse or cumulative impacts on flood behaviour or the environment.
iv. to enable the safe occupation and efficient evacuation of people in the event of a flood.	Mullumbimby residents are provided with advanced warning of flooding should evacuation be required.

Consent Considerations	Comment
Development consent must not be granted to development on land the consent authority considers to be within the flood planning area unless the consent authority is satisfied the development—	
(a) is compatible with the flood function and behaviour on the land, and	The future dwelling within Proposed Lot 2 will be appropriately designed that it does not result in adverse impacts on flood behaviour and function.
(b) will not adversely affect flood behaviour in a way that results in detrimental increases in the potential flood affectation of other development or properties, and	As above.
(c) will not adversely affect the safe occupation and efficient evacuation of people or exceed the capacity of existing evacuation routes for the surrounding area in the event of a flood, and	The small scale development will not result in excess movements on evacuation routes. Mullumbimby residents are provided with advanced warning of flooding should evacuation be required. It is noted that parts of the property are not constrained by flooding in a 1 in 100 year event.

	<p>In the event of a flood, occupants will rely on directions from SES for evacuation options and timeframes.</p> <p>In the event of a major flood, the residents of the property will be able to safely take refuge within their respective dwellings.</p>
(d) incorporates appropriate measures to manage risk to life in the event of a flood, and	Existing and future floor levels and positioning of the proposed development outside high hazard flood areas provide a sufficient level of safety for the occupants during a flood.
(e) will not adversely affect the environment or cause avoidable erosion, siltation, destruction of riparian vegetation or a reduction in the stability of river banks or watercourses.	The proposed development is located within previously cleared and gently sloping land. The proposal does not compromise any riparian vegetation or the stability of any river bank.
In deciding whether to grant development consent on land to which this clause applies, the consent authority must consider the following matters—	
(a) the impact of the development on projected changes to flood behaviour as a result of climate change,	Future construction within a level building area that requires only minor earthworks will not cause any projected changes to flood behaviour.
(b) the intended design and scale of buildings resulting from the development,	The proposed development is small in scale, comprising just one additional residential allotment.
(c) whether the development incorporates measures to minimise the risk to life and ensure the safe evacuation of people in the event of a flood,	Refer to comments under Item (c) in the table above.
(d) the potential to modify, relocate or remove buildings resulting from development if the surrounding area is impacted by flooding or coastal erosion.	The small scale development will contain a new dwelling that is capable of being removed should it be impacted by flooding. However, the positioning and finished levels of the development will be such that a satisfactory level of flood protection is provided.

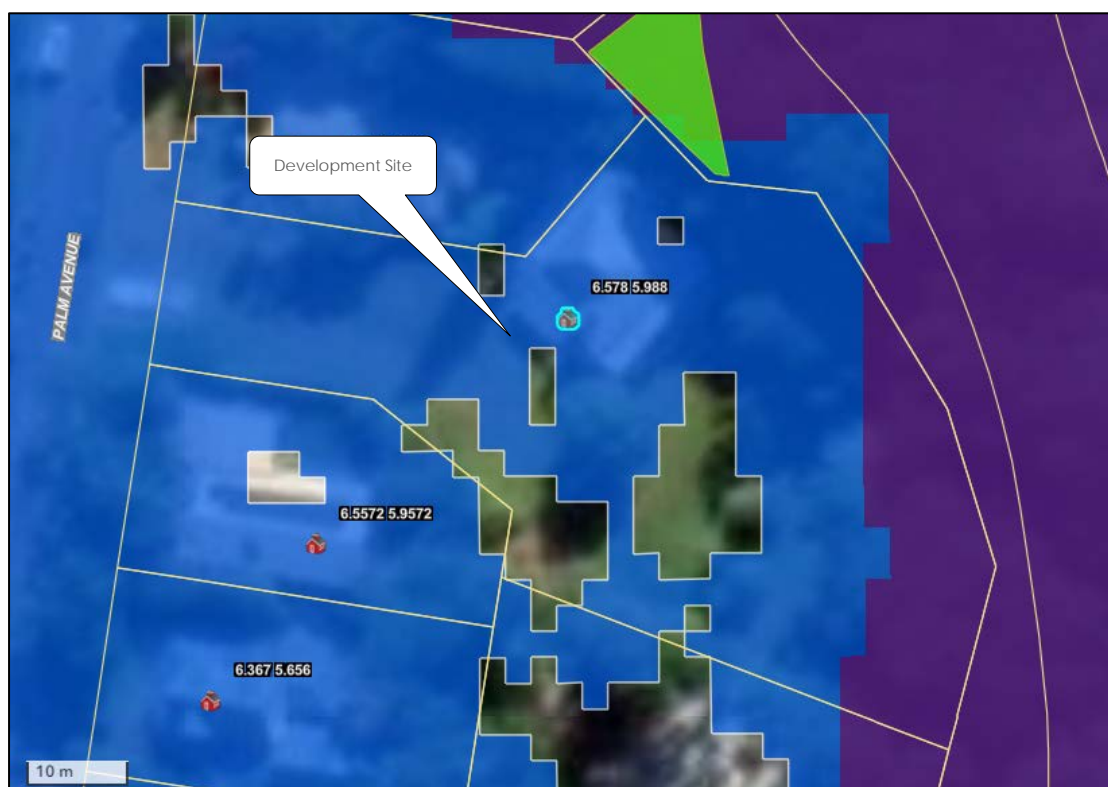


Figure 6 – Flood Planning Area (Byron Shire Council)

LEP 2014 Clause 6.6 – Essential services

The subject allotment has access to required services as discussed in the table below:

Required arrangements	Comment
The supply of water	The allotment is supplied by Council's reticulated water. The existing water meter will be retained within Proposed Lot 1. A second water meter will be installed within Proposed Lot 2.
The supply of electricity	Overhead electricity is supplied to the site administered by Essential Energy. Arrangements will be made with Essential Energy to provide power to Proposed Lot 2. No changes are proposed to the service to the existing dwelling within Proposed Lot 1.
The disposal and management of sewage	The subject land is connected to Council's sewer network. A connection point is located at the front of the allotment. A new connection point is proposed within Lot 2.
Stormwater drainage or on-site conservation	Stormwater currently drains to Chinbible Creek at the rear of the site. A future dwelling within Lot

	2 will provide controlled stormwater discharge to this natural waterway.
Suitable vehicular access	Vehicle access is proposed from Palm Avenue.
NOTE:	All access and service provision will be subject to detailed engineering designs that will be provided as part of the Subdivision Works Certificate Application.

4.3.2 Section 4.15(1)(a)(ii) The Provisions of any Draft Environmental Planning Instrument

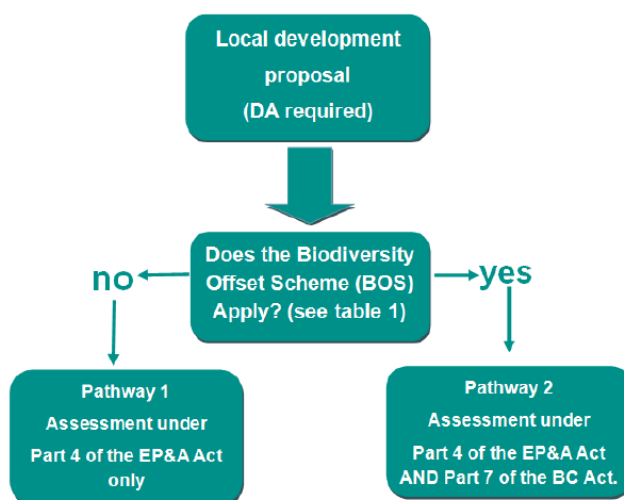
No draft environmental planning instruments raise significant relevant implications for the proposal.

4.3.3 Section 4.15(1)(a)(iii) The Provisions of any Development Control Plans

Byron Development Control Plan (DCP) 2014

DCP 2014 Chapter B1 – Biodiversity

Chapter B1.1.4 of Development Control Plan 2014 provides that there are two major assessment pathways which affect the level of biodiversity assessment and the information required to support a Development Application (refer to diagram below). The controls outline that the appropriate pathway depends on whether or not the proposed development triggers the Biodiversity Offset Scheme (BOS) under the Biodiversity Conservation Act.



Section 4.2 of this Town Planning Report confirms that the Biodiversity Offset Scheme is not triggered by the proposed development. It is noted from Figure 7 below that the development site is located to the south of mapped High Environmental Value vegetation. Refer to comments under Chapter B2.



Figure 7 – High Environmental Value Vegetation mapping (Byron Shire Council)

DCP 2014 Chapter B2 – Tree and Vegetation Management

Chapter B2.2 provides that the vegetation listed in the table below is declared under Part 3 clause 9(1), (2) of the State Environmental Planning Policy (Vegetation in non-rural areas) 2017:

Declared Vegetation	Comment
b. All vegetation mapped as High Environmental Value (HEV);	The proposed development does not affect any vegetation that is mapped within Byron Shire Council's GIS as being of High Environmental Value (HEV). No works are proposed that will affect the mapped vegetation to the north of the subject property.

c. All red flags within Table 3 of DCP Chapter B1 Biodiversity (Appendix 1); NOTE: These include: <ul style="list-style-type: none"> - HEV Vegetation - Wildlife Corridors - Threatened/Significant Species - Koala Habitat - Waterways/Riparian Areas - Flying Fox Camps - Very Large Native Trees - Stages & Hollow-Bearing Trees - Raptor Nests 	The proposed development does not affect any 'red flag' vegetation. However, a future dwelling construction within Proposed Lot 2 is located within 50 meters of a fourth order stream. Refer to comments under Chapter B1.2.1 below.
d. All koala use tree species found in Schedule 2 of the Koala Habitat Protection SEPP specific to the North Coast Koala Management Area (Appendix 2);	The proposed development does not affect any trees that are koala tree species.
e. All vegetation on land zoned E2 or E3;	The property is not within an E2 or E3 zone.
f. All native vegetation within 50m of a fourth order stream or river, or within 20m of a second or third order stream;	The proposed development does not affect any native vegetation that is within 50 metres of the adjacent fourth order stream, or 20 metres of a second or third order stream.
g. All native trees within a non-rural area >150cm diameter at breast height (DBH);	The proposed development does not affect any trees that have a DBH of greater than 150cm.
h. Any tree (native or non-native) that contains a hollow;	The proposed development does not affect any trees that contain a hollow.
i. Very large trees (non native) of significant cultural or amenity value (e.g. Norfolk pine);	The proposed development does not affect any very large trees that are of significant cultural or amenity value.
j. All native vegetation that supports threatened species and their habitat (e.g. koala use trees that provide linkages within urban areas);	The proposed development does not affect any trees that support threatened species and their habitats.
k. All native vegetation on publicly owned or managed land including road reserve;	The proposed development does not affect any native

	vegetation within publicly owned or managed land.
I. Where the native vegetation is a heritage item or within a heritage conservation area under the BLEP 2014 and does not otherwise require development consent as per the BLEP 2014;	The proposed development does not affect any native vegetation that is a heritage item or that is within a heritage conservation area.

However, Chapter B2.2.1 lists a number of Exemptions as listed in the table below:

Exemption	Comment
1. The removal of vegetation that is authorised under Section 60O of the <i>Local Land Services Act 2013</i> .	Not applicable in this case.
2. Native vegetation that Council or the Native Vegetation Panel is satisfied is dead and is not required as habitat for native animals (see B2.2.4).	Not applicable in this case.
3. Native vegetation that Council is satisfied poses an unacceptable risk to human life or property (see B2.2.4).	Not applicable in this case.
4. Vegetation affected by works under State Environmental Planning Policy (Infrastructure) 2007 defined as exempt development.	Not applicable in this case.
5. Any tree where the nearside trunk is 3 metres from the nearest external wall of a lawfully approved existing permanent dwelling or manufactured home that is located on the same property. This does not apply to listed threatened species and ecological communities or areas mapped as koala habitat identified within the Byron Coast Comprehensive Koala Plan of Management or identified under the Koala Habitat Protection SEPP. A permit will be required in those instances.	Not applicable in this case.

6. Any non-native and /or invasive tree species listed in Appendix 3, regardless of size.	Not applicable in this case.
7. Vegetation declared under the <i>Biosecurity Act</i> 2015 as a Mandatory Measure or above (see BSC Invasive Plant Species list)	Not applicable in this case.
8. Trees or saplings of Camphor laurel (<i>Cinnamomum camphora</i>) if under 5m tall.	Not applicable in this case.
9. Vegetation removal that is subject to works under an approved Vegetation Management Plan or Biodiversity Conservation Management Plan.	Not applicable in this case.
10. Restoration activities undertaken by landholders applying current 'best practice' camphor conversion techniques (e.g. Subtropical Rainforest Restoration 3rd Edition, Big Scrub Landcare).	Not applicable in this case.

It is acknowledged that the proposed development will be located within 50 metres of a fourth order stream. However, the proposed works have been positioned to minimise impacts on native vegetation. The proposed development is to be carried out within previously cleared residential land that is free of native trees. The Bush Fire Assessment that has been provided with the Development Application requires an asset protection zone of just 9 metres on the eastern side of the future dwelling within Proposed Lot 2. See extract from this report below. On this basis, it is not anticipated that any clearing works will be required for a future dwelling construction within Proposed Lot 2.

APZ Required	Proposed allotments to comply with Table A1.12.3 PBP2019. The following APZ distances to future dwellings are to be managed and maintained as an Inner Protection Area (IPA) in perpetuity- <ul style="list-style-type: none"> • North, south and west – To the allotment boundaries; • East – Minimum 9m. APZ to be applied to the existing dwelling to the allotment boundaries in all directions.	Acceptable Solution
--------------	--	---------------------

DCP 2014 Chapter B1.2.1 – Development Envelope Controls

Chapter B1.2.1 includes recommended buffer setbacks to nominated 'red flag areas' such as high ecological value vegetation and streams. The proposed development is not located within a buffer area of any high ecological value vegetation. It is acknowledged that a fourth order stream is located to the east of the development site. However, the proposed subdivision relates to an existing residential allotment that already contains development within 50 metres of this waterway. As no native vegetation removal is required for the proposed subdivision or the construction of a future dwelling house within the vacant allotment (Lot 2), the development is not considered to result in conflicts with the objectives of Chapter B1. A minor variation to the 50 metre development envelope provisions of Chapter B1.2.1 is requested in this case.

*DCP 2014 Chapter D6 – Subdivision**DCP 2014 Chapter D6.2.1 – Subdivision Design Guidelines*

Objectives	Comment
1. Site Design	A Site and Context Analysis Plan accompanies this Development Application.
2. Climate Control and Aspect	The topography of the site allows for good solar access to each of the proposed lots. The gentle fall of the land accommodates development sites that do not significantly overshadow one another and will have access to summer breezes.
3. Hazards	Bush fire and flooding hazards can be appropriately managed.
4. Vegetation Removal	No vegetation removal is proposed.
5. Riparian Buffers and Land Fronting Watercourses	The site is not within a buffer area to coastal wetlands.
6. Landscaping	The proposed infill subdivision does not create any additional roadways to require new landscaping or street plantings.
7. Roads	No additional roadworks are proposed.
8. Street Lighting	The proposed infill subdivision does not create any additional roadways to require new lighting.
9. Public Open Space and Public Reserves	Byron Section 7.11 Developer Contributions Plan appropriately levies funds for public open space provision.
10. Stormwater Management	Stormwater currently drains to Chinbible Creek at the rear of the site. A future dwelling within Lot 2 will provide controlled stormwater discharge to this natural waterway.
11. Utility Services	All required utility services are available at the proposed allotments.

12. Provision of Potable Water Supply	The land is connected to Council's reticulated water infrastructure. A new connection will be provided to the rear lot.
13. Sewer	Sewer connection is available to each of the proposed allotments.
14. Strata Title, Community Title and Stratum Subdivision	Not Applicable.

DCP 2014 Chapter D6.4 – Urban Residential Subdivision

DCP 2014 Chapter D6.4.1 – Lot Size and Shape

Objectives	Comment
1. To provide lots of sufficient size to satisfy the needs of future residents, and which will accommodate well designed and innovative development	The proposed allotments have sufficient area to accommodate residential development.
2. To encourage diversity in lot size and opportunities for a variety of housing choice	The proposed configuration supports a variety of housing design within Byron Shire.
3. To ensure that lot design takes into account the natural features of the site and locality.	The proposed allotments have been designed having regards to the slope and physical limitations of the land.

Performance Criteria	Comment
1. Lots must be of sufficient area to allow for the siting of a dwelling and ancillary buildings, including provisions for private open space, solar access, vehicle access and parking. Lots must provide sufficient effluent disposal areas where required.	The proposed allotments provide sufficient area to facilitate a dwelling house and ancillary buildings. A 12m x 15m indicative building envelope is nominated within the development plans.
2. Lot sizes must enable dwellings and driveways to be sited to protect natural or cultural features, and must respond to site constraints including topography, bushland, soil erosion, drainage, and bushfire risk.	No natural or cultural features are compromised by the proposed development.
3. To provide useable areas, lot sizes may need to be increased where sites are steep or contain significant constraints or landscape features including watercourses and easements.	The proposed lots are capable of accommodating usable private open space within the property.
4. Lot design must enable the construction of a built form that is sympathetic to the established character of the area.	The surrounding residential area contains a mix of single and double storey dwellings, as well as dual occupancy development. The proposed eastern allotment supports future housing that is sympathetic to this established character.

Prescriptive Measures	Comment												
1. Lot sizes must not be less than the minimum area specified in Byron LEP 2014 on the lot size map.	The proposal complies as described under LEP Clause 4.1 above.												
<p>2. For lots that are not typical rectangular shaped lots, Table D6.1 indicates Council's preferred minimum lot sizes in urban subdivisions:</p> <p>Table D6.1 – Preferred Minimum Lots Sizes – Urban Subdivision</p> <table> <tr> <th>Type of lot</th><th>Minimum lot area</th></tr> <tr> <td>General lot</td><td>See lot size map (BLEP2014)</td></tr> <tr> <td>Corner lot</td><td>650 m²</td></tr> <tr> <td>Hatchet-shaped lot (excluding access handle)</td><td>800 m²</td></tr> <tr> <td>Hatchet-shaped lot adjacent to public reserve (excluding access handle)</td><td>650 m²</td></tr> <tr> <td>Fan-shaped lot (minimum frontage 7m)</td><td>650 m²</td></tr> </table>	Type of lot	Minimum lot area	General lot	See lot size map (BLEP2014)	Corner lot	650 m ²	Hatchet-shaped lot (excluding access handle)	800 m ²	Hatchet-shaped lot adjacent to public reserve (excluding access handle)	650 m ²	Fan-shaped lot (minimum frontage 7m)	650 m ²	As above.
Type of lot	Minimum lot area												
General lot	See lot size map (BLEP2014)												
Corner lot	650 m ²												
Hatchet-shaped lot (excluding access handle)	800 m ²												
Hatchet-shaped lot adjacent to public reserve (excluding access handle)	650 m ²												
Fan-shaped lot (minimum frontage 7m)	650 m ²												
3. Proposed lots containing existing dwellings must not result in that lot having a floor space ratio lower than that specified on the floor space ratio map.	The subdivision will not create a non-compliant Floor Space Ratio.												
4. Lots must provide an appropriate shape and area to accommodate an unconstrained building envelope with minimum dimensions of 12 metres by 15 metres.	Sufficient space is nominated within each lot to accommodate the existing dwellings and a 12m x 15m building envelope.												
5. Hatchet-shaped lots must have a minimum frontage of 6 metres (i.e. 3 metre driveway and provision for services, landscaping etc). This may translate as 3 metres frontage each if reciprocal rights of carriageway provide shared access to 2 or more adjoining lots. Consideration will be given to a further reduction in lot width for four or more lots where the pavement widths comply with the Northern Rivers Development and Design Manual.	The proposal includes an access handle which provides a 3m frontage for Proposed Lot 2.												
6. The access handle of hatchet-shaped lots must be landscaped in accordance with the requirements of Chapter B9 Landscaping. A landscaping plan must be submitted with the development application for subdivision. Such details could incorporate, for example a meandering driveway with landscaping elements, passing bays, different pavement treatments and kerb blisters incorporating landscaping beds.	The access handle contains existing landscaping which will remain in situ.												

DCP 2014 Chapter D6.4.2 – Access Design

Objective	Comment
1. To ensure provision of safe and effective access to properties.	Each of the proposed allotments have safe and effective access. Refer to the development plans within the Annexures of this report.
Performance Criteria	Comment

1. Driveways and access must form an integral part of the overall design of the subdivision.	Each of the proposed lots have access. Refer to the development plans attached to this report.
2. Driveway and access design is to provide a safe and efficient entrance/exit to individual lots.	Access to each lot has been designed to be safe and efficient.

Prescriptive Measures	Comment
1. Applications must demonstrate that vehicle access can be provided to each lot created by the subdivision in accordance with Chapter B3 Services. In certain circumstances, due to topography and other constraints, the driveway will need to be designed and constructed at the subdivision stage.	Refer also to comments below under Section B4.2.3.
2. Additional standards may apply in bushfire prone areas as per the requirements of the NSW Rural Fire Service.	The site is located within a bush fire area. Refer to the Annexures of this Town Planning Report for a Bush Fire Assessment Report.

DCP 2014 Chapter B4.2.3 – Vehicle Access and Manoeuvring Areas

Objectives	Comment
1. Driveways and manoeuvring areas are to be designed and constructed in accordance with the requirements of the current editions of Australian Standard 2890 and the Northern Rivers Local Government Development & Design Manual.	A shared access driveway is proposed. Full details will be provided within Engineering Plans to be submitted with the Subdivision Works Certificate Application.
2. All parking and service areas shall be provided with sufficient manoeuvring areas to allow vehicles to enter and leave the site in a forward direction. Dwelling houses and dual occupancy developments are exempt from this requirement except when located on roads with high traffic volumes or with short sight distances, or on roads with other traffic safety issues.	As above. Sufficient area is available within each of the proposed allotments for vehicle manoeuvring.
3. Designs for manoeuvring areas are to be in accordance with the current editions of Australian Standard 2890 and must include a swept path analysis for the relevant design vehicle.	As above.
4. Driveways, manoeuvring areas and parking areas, including loading & unloading areas, should be sealed with an all weather surface, such as asphalt, bitumen seal, concrete, pavers or other similar treatment. Porous paving should be provided, where soils are capable of high infiltration rates, for parking spaces (other than those for people with disabilities) and domestic driveways. Gravel surfaces are generally not	A concrete driveway surface is proposed.

acceptable in urban locations and some rural situations (issues such as noise, dust, and erosion need to be considered).	
<p>6. Internal driveways for more than three dwellings should have a minimum driveway width of 5.5 metres to facilitate two-way access. The driveway width may be reduced to a minimum width of 3.5m where there are no potential internal driveway conflicts or traffic safety issues having regard to the following:</p> <p>a) a minimum driveway width of 5.5m is provided for at least the first 6 m from the property boundary;</p> <p>b) adequate passing opportunities are provided;</p> <p>c) good sight distance is available;</p> <p>d) slope of driveway is not excessive;</p> <p>e) frontage roadway has less than 3000 vehicle trips per day;</p> <p>f) traffic and pedestrian volumes on the driveway.</p>	<p>A single driveway is proposed to be shared between two lots only. However, engineering designs will ensure that sufficient width is provided in the access driveway to accommodate future increases in residential density within the property.</p>
7. Where driveways are to be negotiated by a waste collection vehicle, they must have a maximum gradient of 16% at any one point.	No driveways are required to be negotiated by a waste collection vehicle.

4.3.4 Section 4.15(1)(b) The likely Impacts of the Proposed Development

In assessing the subject proposal, Council must consider the likely impacts of the development, including environmental impacts, on both the natural and built environments, and social and economic impacts in the locality.

This Section of the Statement of Environmental Effects indicates the following matters, where relevant to the proposal:

- (a) the environmental impacts of the development,
- (b) how the environmental impacts of the development have been identified,
- (c) the steps to be taken to protect the environment or to lessen the expected harm to the environment.

The following actions were applied to assist in identifying potential impacts from the proposed development:

- An inspection of the site on 28 November 2023.
- Review of aerial photography to identify vegetation cover and the position of development within the site and surrounding properties.

- Review of environmental planning tools including vegetation mapping, koala habitat mapping, BDAR mapping, stream mapping, constraints mapping and zoning mapping.
- Review of historic planning approvals to confirm existing and past land uses within the site and adjoining properties.

Economic Impacts

The proposal is likely to result in positive economic impacts through the creation of additional lots within the Mullumbimby township. The proposal will require the engagement of local consultants and tradespersons to design and complete access and service connections for each lot.

Social impacts

The development site is located within the Mullumbimby residential locality. Residential properties surround the development site in all directions (noting those on the opposite side of Chinbible Creek). The proposed development will not adversely affect residents within the immediate or extended neighbourhood.

Impacts on the Built Environment

As the subdivision requires only minor building works (installation of underground services and an access driveway), no adverse impacts on the built environment will arise from the proposal.

Impacts on Traffic and Car Parking

Adequate area is available within the site for vehicle parking as required. Sufficient manoeuvring area is available to allow vehicles to exit in a forward direction. Palm Avenue is a cul-de-sac and has low traffic volumes.

Impacts on the Natural Environment

No vegetation works are proposed as part of the subdivision. The site is not in a sensitive environmental area. It is removed from coastal wetland vegetation. No adverse impact on the natural environment are anticipated from the proposed subdivision works.

4.3.5 Section 4.15(1)(c) Suitability of the Site for the Proposed Development

The development site comprises a 2,529 square metre allotment located within the Byron Bay urban area. The land is within the R2 Low Density Residential Zone under Byron Local Environmental Plan 2014.

The allotment contains an existing dwelling house and ancillary structures. The land has sufficient area to meet Byron Shire Council's minimum subdivision lot size controls. Direct access is available to each of the proposed lots from the public street system. Urban services are also available from the adjacent road reserve and underground mains. Bush fire constraints can be managed in accordance with the attached report. The subject land is assessed as being suitable for subdivision.

4.3.6 Section 4.15(1)(e) The Public Interest

The proposed subdivision development does not compromise the public interest. The proposed development meets Byron Shire Council's development controls for urban subdivision.

5.0 Conclusion

The proposal seeks to subdivide the 2,529 square metre site into two allotments of 1,322 square metres and 1,207 square metres. The proposed development has considered the requirements of Byron Local Environmental Plan 2014 and Development Control Plan 2014.

The proposal is permitted with consent within the R2 Low Density Residential Zone under Byron Local Environmental Plan 2014. It is consistent with the objectives of the zone and does not detract from the surrounding residential land uses.

The proposal aligns with the planning controls of Byron Shire Council. The development provides compliant lot sizes and is considered to be suitable for the proposed development.

This report addresses the matters for consideration under Section 4.15 of the Environmental Planning and Assessment Act 1979 and relevant planning instruments. It is considered that sufficient information has been provided to assess the proposal as a Development Application in light of the issues identified. However, please advise the Applicant should further information be required to address any issues that may arise during assessment.

.

Joe Davidson

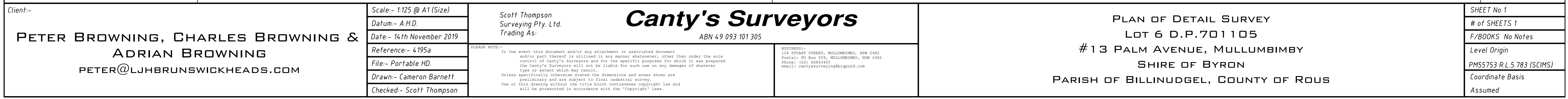
Annexure A

Survey Plan

(i) This Detail Survey is not a 'Survey' as defined by the Surveying Act, 2002. If any Construction is planned it would be advisable to carry out further survey work to determine the boundary dimensions.

(iii) Tree Species should be Verified
by a Suitably Qualified Professional.
Tree Spreads are Diagrammatic only
& may not be Symmetrical.

MAGNETIC NORTH



Annexure B

Bush Fire Assessment Report

BUSH FIRE ASSESSMENT REPORT

**Lot 6 DP 701105,
13 Palm Avenue, Mullumbimby**

Proposed 2 lot Subdivision s100B.

Prepared for: Chris Bridger

Prepared by: Peter Thornton
BPAD-L3 Accredited Practitioner

Reference: 23/233

Date: 17 October 2023

BCA Check Pty Ltd
t/as Bushfire Certifiers
4/47A Ballina Street Lennox Head NSW 2478
PO Box 375 LENNOX HEAD NSW 2478

ABN 95104451210
T: 02 66877461,
E: info@bcacheck.com.au



Peter Thornton
Principal
BPAD-L3 Accredited Practitioner No. 14867
MFireSafeEng



DOCUMENT CONTROL				
Revision	Date	Description	Prepared	Authorised
A	17.10.2023	Draft report – not for DA submission	Patrick Thornton	Peter Thornton
B	18.10.2023	Reviewed – Final Report	Reviewed PT	Peter Thornton

Table of Contents

1.0 EXECUTIVE SUMMARY	4
2.0 INTRODUCTION	6
2.1 GENERAL.....	6
2.2 SIGNIFICANT ENVIRONMENTAL FEATURES	6
2.3 REPORT DETAILS.....	7
3.0 PROPOSED DEVELOPMENT	7
4.0 BUSHFIRE THREAT ASSESSMENT.....	8
5.0 ASSET PROTECTION ZONES AND CONSTRUCTION STANDARDS.....	11
6.0 WATER AND UTILITY SERVICES	13
6.1 WATER SERVICES.....	13
6.2 ELECTRICITY SERVICES.....	14
6.3 GAS SERVICES	14
7.0 ACCESS.....	15
8.0 LANDSCAPING	15
9.0 CONCLUSION	15
 APPENDIX A: Existing and Proposed Lot Layout Plans.....	17
APPENDIX B: Asset Protection Zone Requirements - Appendix 4 PBP 2019.....	18
APPENDIX C: Standards for Asset Protection Zones RFS 2005	22

1.0 EXECUTIVE SUMMARY

The purpose of this report is to establish suitable bushfire mitigation measures for the proposed 2-lot residential subdivision at Lot 6 DP 701105, 13 Palm Avenue, Mullumbimby, providing recommendations to comply with Planning for Bushfire Protection 2019 (PBP2019) and to accompany an application for a Bush Fire Safety Authority.

The proposed subdivision will create one additional allotment; noting the northern residual lot (Figure 2) supports the existing dwelling. The proposed allotments are located on bushfire prone land and are able to comply with the acceptable solutions of PBP2019. This report is to be assessed by the consent authority pursuant to s100B Rural Fires Act 1997.

The proposed subdivision does not increase the bushfire risk to the existing dwelling on the proposed northern lot. The existing dwelling has no formal bushfire protection measures, therefore asset protection zones (APZs) are recommended to create a better outcome than currently exists. Additionally, there will be adequate APZ on the northern lot for a future rebuild to meet the 29kw/m² radiant heat flux threshold.

The report has demonstrated compliance with each of the heads of consideration appropriate to the acceptable solutions and performance criteria of PBP 2019. The following table is provided as a summary of the recommendations and method of assessment for each consideration relating to Planning for Bushfire Protection 2019.

MEASURE	RECOMMENDATION	METHOD OF ASSESSMENT
Construction Standards	To be assessed at DA stage for future dwelling. The bushfire hazard to the existing approved dwelling will remain unchanged, therefore no upgrade measures proposed.	Acceptable Solution
	Existing dwelling – no ember upgrade required – APZ provided.	Better bushfire outcome
APZ Required	Proposed allotments to comply with Table A1.12.3 PBP2019. The following APZ distances to future dwellings are to be managed and maintained as an Inner Protection Area (IPA) in perpetuity- <ul style="list-style-type: none">• North, south and west – To the allotment boundaries;• East – Minimum 9m. APZ to be applied to the existing dwelling to the allotment boundaries in all directions.	Acceptable Solution

Water Supply	Reticulated water supply. Street hydrants provide coverage in accordance with AS 2419.1-2021 or standard applicable at the time of installation.	Acceptable Solution
Electricity Supply	Existing electricity supply. New electricity supply to comply with Section 5.3.3 and Table 5.3c PBP2019.	Acceptable Solution
Gas Supply	To be assessed at DA stage for future dwelling. No upgrades required to existing dwelling.	Acceptable Solution
Landscaping	Landscaping to comply with Appendix 4 of Planning for Bushfire Protection 2019 and managed and maintained in perpetuity. To be assessed at DA stage for future dwelling.	Acceptable Solution
Access	Standard access suitable. No upgrade required to existing dwelling.	Acceptable Solution

The report makes the following recommendations for the development. The full report however is to be considered, including Section 2.2 that details the Significant Environmental Features that are not considered by this report.

1. Future dwellings are to be assessed pursuant to s4.14 or s4.15 of the Environmental Planning and Assessment Act 1979.
2. At the commencement of works and in perpetuity the following APZ distances from the proposed building envelope and existing dwelling are to be managed and maintained as an Inner Protection Area (IPA) to prevent the spread of a fire towards the buildings in accordance with Appendix 4 of Planning for Bushfire Protection 2019 and the requirements of 'Standards for Asset Protection Zones' RFS 2005 (as attached in Appendix B & Appendix C of this report) –
 - North, south and west – To the allotment boundary;
 - East – Minimum 9m.

APZ to be applied to the existing dwelling to the allotment boundaries in all directions.

3. Landscaping on the proposed allotments to comply with Appendix 4 of Planning for Bushfire Protection 2019 and managed and maintained in perpetuity.
4. New fencing to comply with section 7.6 of Planning for Bushfire Protection 2019.

2.0 INTRODUCTION

2.1 General

The purpose of this report is to establish suitable bushfire mitigation measures for the proposed 2 lot subdivision. The report has been prepared to address the requirements of Planning for Bushfire Protection 2019 to accompany an application for a Bush Fire Safety Authority.

The recommendations within this report address the aims and objectives of Planning for Bushfire Protection 2019 to reduce the risk of ignition of the building/s in a bushfire event. It is noted however that bushfire is a natural phenomenon and there can never be any guarantee that a building or occupants will not be adversely affected by bushfire.

2.2 Significant environmental features

An assessment is to be undertaken, if applicable, regarding:

- SEPP (Biodiversity and Conservation) 2021
- SEPP (Resilience and Hazards) 2021
- Biodiversity Conservation Act 2016 (NSW)
- Local Land Services Act 2013 (NSW)
- Land Management (Native Vegetation) Code 2017 (NSW)
- National Parks and Wildlife Act 1974 (NSW)
- Environmental Protection and Biodiversity Conservation Act 1999 (Cwlth)

This report does not consider the above legislation and should be read in conjunction with the Statement of Environmental Effects submitted with the development application.

No trees are required for removal to achieve the asset protection zones, it being noted the asset protection zones have been established on the basis there are no requirements to revegetate any parts of the subject site, as advised by the applicant.

2.3 Report details

Report Reference No.:	23/233
Property Address:	Lot 6 DP 701105, 13 Palm Avenue, Mullumbimby.
Local Government Area:	Byron Shire Council.
Proposal:	2-Lot subdivision.
Drawings:	Preliminary subdivision sketch provided by client.
Report Prepared By:	Peter Thornton MFireSafeEng BPAD – L3 Accredited Practitioner.

3.0 PROPOSED DEVELOPMENT

3.1 General

The applicant is proposing a 2-lot residential subdivision as shown in the Locality Plan in Figure 1. The proposed allotment layout shown in Figure 2 indicates the proposed northern lot supporting the existing dwelling and the proposed southern lot which will be vacant and will support a future dwelling.

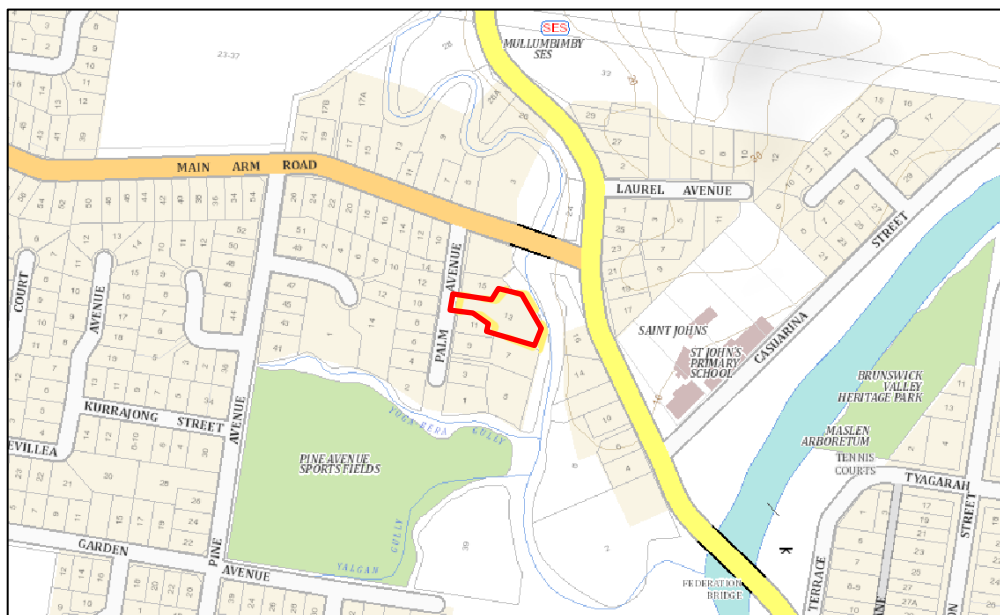


Figure 1 – Location map

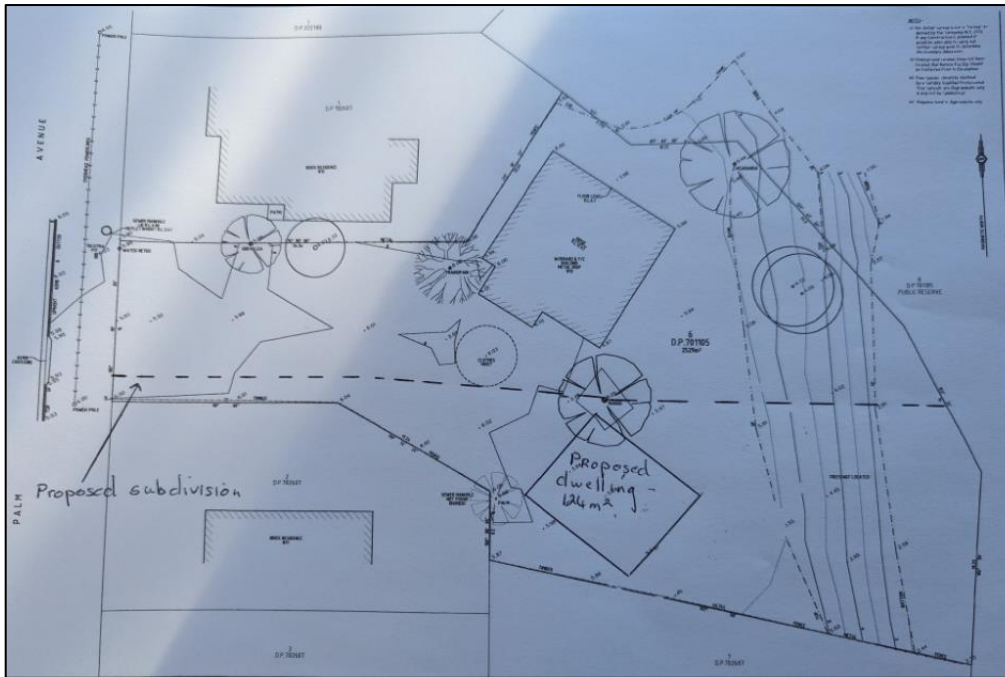


Figure 2 – indicative plan of subdivision (proposed dwelling not included in this report).

4.0 BUSHFIRE THREAT ASSESSMENT

Bushfire prone land mapping as shown in Figure 3 indicates the subject site as being within the buffer to Category 1 bushfire prone land. Aerial mapping and inspection of the site reveals the bushfire prone land map is inaccurate with respect to the current bushfire hazard.

Site inspection revealed **rainforest** vegetation is the predominant vegetation class to the north, east, and south. The mapped Category 1 forest vegetation has therefore been determined as Category 2 rainforest.



Figure 3: Bushfire prone land map

Source: NSW Planning Portal

The rainforest vegetation to the north is located around a large body of water significantly reducing the fuel load in that area, as shown in Photo 1. The vegetation to the north is therefore considered low threat as shown in Figure 5.

Rainforest vegetation to the east and south is located along a creek with moderately steep slopes on either side of the creek, as shown in Photo 3 however there are over minimum distances (short runs). For the purpose of determining the effective slope most likely to influence bushfire behaviour, the slope has been measured across the creek bank. Therefore, the slopes to the east and south are flat/upslope as shown in Figure 4.



Photo 1: Low threat area to the north including body of water. Peg indicating allotment boundary.



Photo 2: Rainforest vegetation to the east.



Photo 3: Rainforest vegetation and waterway to the east.



Figure 4: Slope analysis



Figure 5: Bushfire threat analysis

Source: Nearmap image

5.0 ASSET PROTECTION ZONES AND CONSTRUCTION STANDARDS

Asset Protection Zones (APZ) are areas established and maintained to ensure bushfire fuels are progressively reduced between the development and the bushfire hazard. The APZ incorporates an Inner Protection Area (IPA) having reduced fuel loadings of approximately 3t/ha.

It is recommended an APZ be provided around the existing dwelling on the proposed northern lot to provide a better bushfire outcome in accordance with s5.1.3 PBP2019 upgrade provisions and ensure the site does not become a hazard to the adjoining allotment.

The existing dwelling is not recommended to be upgraded for ember attack as part of this assessment. Section 4 of this report establishes that each proposed allotment will be capable of supporting APZs in accordance with section 5.3.1 and Table A1.12.3 of PBP2019 as detailed in Table 1.

Table 1 – Asset Protection Zones – Acceptable Solutions Table 5.3a PBP2019

Performance Criteria and Acceptable Solution	Comment	Capable of Compliance
Potential building footprints must not be exposed to radiant heat levels exceeding 29kW/m ² on each proposed lot. APZs are provided in accordance with Appendix 1 PBP 2019 Table A1.12.3.	<p>A future dwelling on each proposed lot is capable of achieving compliance with acceptable solutions. APZ to be applied to the existing dwelling to achieve a better bushfire outcome.</p> <p>It has also been assessed that the residual allotment will be capable of supporting a future replacement dwelling within the 29kW/m² threshold if required i.e. the proposed subdivision will not compromise future compliance requirements pursuant to current legislation.</p>	Yes
APZ's are to be managed and maintained to prevent the spread of a fire towards the building. APZs are managed in accordance with the requirements of Appendix 4 PBP 2019.	APZ's are capable of being provided in accordance with Appendix 4 PBP2019 and the requirements of Standards for Asset Protection Zones RFS 2005. APZ's recommended for the existing dwelling.	Yes
APZ's are provided in perpetuity. APZs are wholly within the boundaries of the development site.	Required APZ's must be provided within the boundaries of the site. Capable of achieving compliance.	Yes
APZ maintenance is practical, soil stability is not compromised and the potential for crown fires is minimised. APZs are located on lands with a slope less than 18 degrees.	Recommended APZs will be located on lands with a slope less than 18°	Yes
Landscaping is designed and managed to minimise flame contact and radiant heat to buildings, and the potential for wind-driven embers to cause ignitions. Landscaping is in accordance with Appendix 4 PBP 2019.	Applicant to ensure compliance. Landscaping plans have not been assessed.	Yes
Fencing is constructed in accordance with s7.6 PBP2019.	Applicant to ensure compliance. Fencing has not been assessed.	Yes

Subject to implementation of recommended APZ's a future dwelling on the proposed lots will not be exposed to radiant heat levels exceeding 29kW/m² and is to be assessed at DA stage in accordance with s4.14 of the *Environmental Planning and Assessment Act 1979*.

Table 2 summarises the category of bushfire attack pursuant to Planning for Bushfire Protection 2019.

Table 2: Summary Bushfire Threat Assessment, APZs - Proposed allotments					
ASPECT	SLOPE	VEGETATION CLASS Figure A1.2 PBP2019	DISTANCE TO VEGETATION	APZ <29kW/m² Table A1.12.3 PBP2019	Comment
North	n/a	Low threat	n/a	To the allotment boundary	Future buildings are capable of being sited to receive <29kW/m ² radiant heat flux and are to be assessed at DA stage. Existing dwelling - entire allotment to be managed and maintained as an IPA.
South	Flat	Rainforest	Approx. 76m of low threat land	To the allotment boundary	
East	Flat	Rainforest	Approx. 21m	9m	
West	n/a	Managed	n/a	To the allotment boundary	

At the commencement of works and in perpetuity the following APZ distances from future building envelopes and the existing dwelling are to be managed and maintained as an Inner Protection Area (IPA) to prevent the spread of a fire towards the future dwellings in accordance with Appendix 4 of Planning for Bushfire Protection 2019 and the requirements of 'Standards for Asset Protection Zones' RFS 2005 as attached in Appendix B & Appendix C –

- North, south and west – To the allotment boundary;
- East – Minimum 9m

6.0 WATER AND UTILITY SERVICES

6.1 Water services

Property access is provided by way of Palm Avenue giving fire fighters access to the proposed allotments. Existing street hydrants are provided in Palm Avenue. Pressure and flow of hydrants have not been tested to determine compliance with AS 2419.1-2005.

The access table in Section 5.3.2 of Planning for Bushfire Protection 2019 does not have specific requirements where the access from the public road supporting hydrants to the most distant part of an existing or future building has an unobstructed path of 70m. Street hydrants in Palm Avenue are located to provide coverage of the proposed allotments.

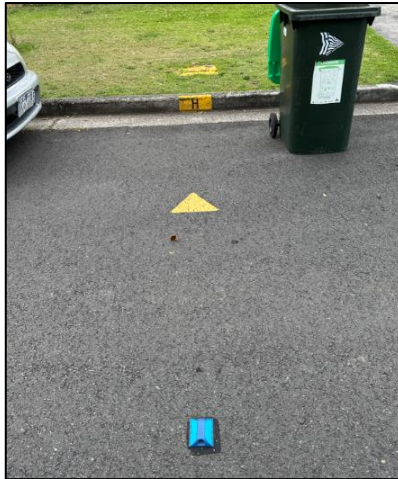


Photo 4: Street hydrant in Palm Avenue

6.2 Electricity services

New electrical transmission lines if required are to comply with Section 5.3.3 and Table 5.3c of Planning for Bushfire Protection 2019 as follows:

- where practicable, electrical transmission lines are underground; and
- where overhead, electrical transmission lines are proposed as follows:
 - lines are installed with short pole spacing of 30m, unless crossing gullies, gorges or riparian areas; and
 - no part of a tree is closer to a power line than the distance set out in accordance with the specifications in ISSC3 *Guideline for Managing Vegetation Near Power Lines*.

6.3 Gas services

The following aspects are to comply with Section 5.3.3 and Table 5.3c of Planning for Bushfire Protection 2019 should new gas service be considered:

- reticulated or bottled gas is installed and maintained in accordance with AS/NZS 1596:2014 – The storage and handling of LP Gas, the requirements of relevant authorities, and metal piping is used;
- all fixed gas cylinders are kept clear of all flammable materials to a distance of 10m and shielded on the hazard side;
- connections to and from gas cylinders are metal;
- polymer-sheathed flexible gas supply lines are not used; and
- above-ground gas service pipes are metal, including and up to any outlets.

7.0 ACCESS

Each proposed allotment has a frontage to the public road system being Palm Avenue providing fire fighters access to the allotments from the public road system directly to the private land. Standard access is suitable for the proposed allotments with no specific bushfire specification required.

8.0 LANDSCAPING

The majority of buildings adversely impacted upon in a bushfire event happen through ember attack and in this regard combustible material surrounding the building e.g. landscaping can play a significant part during the event. Adequate management of landscaping is critical to the survivability of an asset and for occupant safety during a bushfire.

Landscaping is capable of complying with 5.3.1 APZ's and Table 5.3a PBP 2019 and will be assessed with individual development applications for future dwelling. An upgrade of landscaping is recommended within proposed APZ's surrounding the existing dwelling.

Landscaping must comply with Appendix 4 PBP 2019 and Standards for Asset Protection Zones RFS 2005 as attached in Appendix B and C of this report. Fencing to comply with Clause 7.6 PBP 2019.

9.0 CONCLUSION

The report establishes the subdivision, existing dwelling and any future dwellings will be capable of achieving compliance with Planning for Bushfire Protection 2019 based on the recommendations contained in Section 1 of this report. Recommendations for upgrading bushfire mitigation measures in relation to the existing dwelling have been provided.

DISCLAIMER

This report was prepared for the purposes and exclusive use of the stated client to accompany a two-lot subdivision development application to Byron Shire Council and is not to be used for any other purpose or by any other person or Corporation. BCA Check Pty Ltd accepts no responsibility for any loss or damage suffered howsoever arising to any person or Corporation who may use or rely on this report in contravention of the terms of this clause.

As identified in Planning for Bushfire Protection 2019 and the Building Code of Australia the report is to provide recommendations to reduce the risk of ignition and does not guarantee the complete protection of the building in the event of bush fire or that the building will not be adversely impacted upon.

Reporting has been based on the relevant Council and Rural Fire Service Guidelines however recommendations or suggestions given in this report are based on our site investigation at the time of reporting. In some cases site conditions may change dramatically within a few years due to rapid vegetation re-growth and invading weed species.

REFERENCES

NSW Rural Fire Service and Planning NSW (2019), *Planning for bushfire protection, A guide for councils planners fire authorities developers and homeowners*. Rural Fire Service NSW Australia.

Standards Australia (2018), *AS3959 Construction of buildings in bushfire prone areas*, Australian Standards, Sydney.

LEGISLATION

Environmental Planning and Assessment Act 1979 and Regulations 2021. *New South Wales*. Parliamentary Counsel's Office, NSW Government Information Service.

Rural Fires Act 1997. *New South Wales*. Parliamentary Counsel's Office, NSW Government Information Service.

Rural Fires Regulation 2022, *New South Wales*. Parliamentary Counsel's Office, NSW Government Information Service.

APPENDIX A

Preliminary subdivision plan

APPENDIX B

Asset Protection Zone Requirements - Appendix 4 PBP 2019

APPENDIX 4

ASSET PROTECTION ZONE REQUIREMENTS

In combination with other BPMs, a bush fire hazard can be reduced by implementing simple steps to reduce vegetation levels. This can be done by designing and managing landscaping to implement an APZ around the property.

Careful attention should be paid to species selection, their location relative to their flammability, minimising continuity of vegetation (horizontally and vertically), and ongoing maintenance to remove flammable fuels (leaf litter, twigs and debris).

This Appendix sets the standards which need to be met within an APZ.

A4.1 Asset Protection Zones

An APZ is a fuel-reduced area surrounding a building or structure. It is located between the building or structure and the bush fire hazard.

For a complete guide to APZs and landscaping, download the NSW RFS document *Standards for Asset Protection Zones* at the NSW RFS Website www.rfs.nsw.gov.au.

An APZ provides:

- a buffer zone between a bush fire hazard and an asset;
- an area of reduced bush fire fuel that allows for suppression of fire;
- an area from which backburning or hazard reduction can be conducted; and
- an area which allows emergency services access and provides a relatively safe area for firefighters and home owners to defend their property.

Bush fire fuels should be minimised within an APZ. This is so that the vegetation within the zone does not provide a path for the spread of fire to the building, either from the ground level or through the tree canopy.

An APZ, if designed correctly and maintained regularly, will reduce the risk of:

- direct flame contact on the building;
- damage to the building asset from intense radiant heat; and
- ember attack.

The methodology for calculating the required APZ distance is contained within Appendix 1. The width of the APZ required will depend upon the development type and bush fire threat. APZs for new development are set out within Chapters 5, 6 and 7 of this document.

In forest vegetation, the APZ can be made up of an Inner Protection Area (IPA) and an Outer Protection Area (OPA).

A4.1.1 Inner Protection Areas (IPAs)

The IPA is the area closest to the building and creates a fuel-managed area which can minimise the impact of direct flame contact and radiant heat on the development and act as a defensible space. Vegetation within the IPA should be kept to a minimum level. Litter fuels within the IPA should be kept below 1cm in height and be discontinuous.

In practical terms the IPA is typically the curtilage around the building, consisting of a mown lawn and well maintained gardens.

When establishing and maintaining an IPA the following requirements apply:

Trees

- tree canopy cover should be less than 15% at maturity;
- trees at maturity should not touch or overhang the building;
- lower limbs should be removed up to a height of 2m above the ground;
- tree canopies should be separated by 2 to 5m; and
- preference should be given to smooth barked and evergreen trees.

Shrubs

- create large discontinuities or gaps in the vegetation to slow down or break the progress of fire towards buildings should be provided;
- shrubs should not be located under trees;
- shrubs should not form more than 10% ground cover; and
- clumps of shrubs should be separated from exposed windows and doors by a distance of at least twice the height of the vegetation.

Grass

- grass should be kept mown (as a guide grass should be kept to no more than 100mm in height); and
- leaves and vegetation debris should be removed.

A4.1.2 Outer Protection Areas (OPAs)

An OPA is located between the IPA and the unmanaged vegetation. It is an area where there is maintenance of the understorey and some separation in the canopy. The reduction of fuel in this area aims to decrease the intensity of an approaching fire and restricts the potential for fire spread from crowns; reducing the level of direct flame, radiant heat and ember attack on the IPA.

Because of the nature of an OPA, they are only applicable in forest vegetation.

When establishing and maintaining an OPA the following requirements apply:

Trees

- tree canopy cover should be less than 30%; and
- canopies should be separated by 2 to 5m.

Shrubs

- shrubs should not form a continuous canopy; and
- shrubs should form no more than 20% of ground cover.

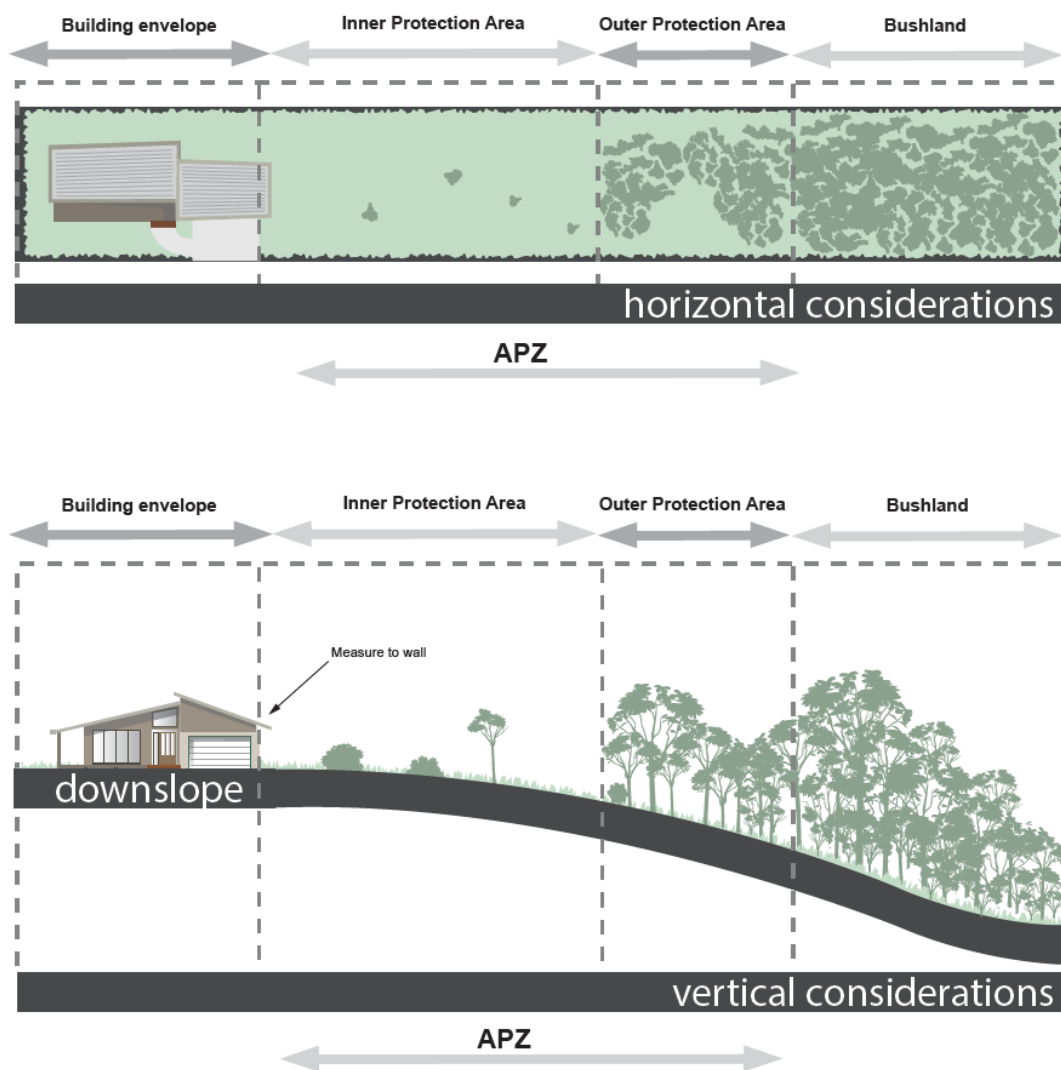
Grass

- grass should be kept mown to a height of less than 100mm; and
- leaf and other debris should be removed.

An APZ should be maintained in perpetuity to ensure ongoing protection from the impact of bush fires. Maintenance of the IPA and OPA as described above should be undertaken regularly, particularly in advance of the bush fire season.

Figure A4.1

Typical Inner and Outer Protection Areas.



APPENDIX C

Standards for Asset Protection Zones RFS 2005

standards

for asset protection zones

protection

firewisefirewisefirewisefirewisefirewisefirewisefirewisefirewisefirewisefirewisefirewisefirewisefirewise
ewisefirewisefirewisefirewisefirewisefirewisefirewisefirewisefirewisefirewisefirewisefirewisefirewise
isefirewisefirewisefirewisefirewisefirewisefirewisefirewisefirewisefirewisefirewisefirewisefirewise
firewisefirewisefirewisefirewisefirewisefirewisefirewisefirewisefirewisefirewisefirewisefirewise
ewisefirewisefirewisefirewisefirewisefirewisefirewisefirewisefirewisefirewisefirewisefirewisefirewise
isefirewisefirewisefirewisefirewisefirewisefirewisefirewisefirewisefirewisefirewisefirewisefirewise

NSW RURAL FIRE SERVICE



STANDARDS FOR ASSET PROTECTION ZONES

INTRODUCTION	3
WHAT IS AN ASSET PROTECTION ZONE?	3
WHAT WILL THE APZ DO?	3
WHERE SHOULD I PUT AN APZ?.....	4
STEP 1. DETERMINE IF AN APZ IS REQUIRED	4
STEP 2. DETERMINE WHAT APPROVALS ARE REQUIRED FOR CONSTRUCTING YOUR APZ.....	5
STEP 3. DETERMINE ASSET PROTECTION ZONE WIDTH	5
STEP 4. DETERMINE WHAT HAZARD REDUCTION METHOD IS REQUIRED TO REDUCE BUSH FIRE FUEL IN YOUR APZ	6
STEP 5. TAKE MEASURES TO PREVENT SOIL EROSION.....	9
STEP 6. ONGOING MANAGEMENT AND LANDSCAPING	10
PLANTS FOR BUSH FIRE PRONE GARDENS.....	10
WIND BREAKS.....	11

INTRODUCTION

For thousands of years bush fires have been a natural part of the Australian landscape. They are inevitable and essential, as many Australian plants and animals have adapted to fire as part of their life cycle.

In recent years developments in bushland areas have increased the risk of bush fires harming people and their homes and property. But landowners can significantly reduce the impact of bush fires on their property by identifying and minimising bush fire hazards. There are a number of ways to reduce the level of hazard to your property, but one of the most important is the creation and maintenance of an Asset Protection Zone (APZ).

A well located and maintained APZ should be used in conjunction with other preparations such as good property maintenance, appropriate building materials and developing a family action plan.

WHAT IS AN ASSET PROTECTION ZONE?

An Asset Protection Zone (APZ) is a fuel reduced area surrounding a built asset or structure. This can include any residential building or major building such as farm and machinery sheds, or industrial, commercial or heritage buildings.

An APZ provides:

- a buffer zone between a bush fire hazard and an asset;
- an area of reduced bush fire fuel that allows suppression of fire;
- an area from which backburning may be conducted; and
- an area which allows emergency services access and provides a relatively safe area for firefighters and home owners to defend their property.

Potential bush fire fuels should be minimised within an APZ. This is so that the vegetation within the planned zone does not provide a path for the transfer of fire to the asset either from the ground level or through the tree canopy.

WHAT WILL THE APZ DO?

An APZ, if designed correctly and maintained regularly, will reduce the risk of:

- direct flame contact on the asset;
- damage to the built asset from intense radiant heat; and
- ember attack on the asset.

WHERE SHOULD I PUT AN APZ?

An APZ is located between an asset and a bush fire hazard.

The APZ should be located wholly within your land. You cannot undertake any clearing of vegetation on a neighbour's property, including National Park estate, Crown land or land under the management of your local council, unless you have written approval.

If you believe that the land adjacent to your property is a bush fire hazard and should be part of an APZ, you can have the matter investigated by contacting the NSW Rural Fire Service (RFS).

There are six steps to creating and maintaining an APZ. These are:

1. Determine if an APZ is required;
2. Determine what approvals are required for constructing your APZ;
3. Determine the APZ width required;
4. Determine what hazard reduction method is required to reduce bush fire fuel in your APZ;
5. Take measures to prevent soil erosion in your APZ; and
6. Landscape and regularly monitor in your APZ for fuel regrowth.

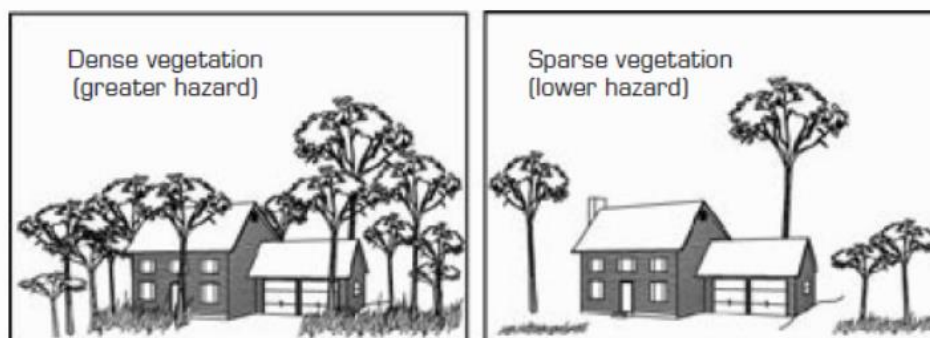
STEP 1. DETERMINE IF AN APZ IS REQUIRED

Recognising that a bush fire hazard exists is the first step in developing an APZ for your property.

If you have vegetation close to your asset and you live in a bush fire prone or high risk area, you should consider creating and maintaining an APZ.

Generally, the more flammable and dense the vegetation, the greater the hazard will be. However, the hazard potential is also influenced by factors such as slope.

- A large area of continuous vegetation on sloping land may increase the potential bush fire hazard.
- The amount of vegetation around a house will influence the intensity and severity of a bush fire.
- The higher the available fuel the more intense a fire will be.



Isolated areas of vegetation are generally not a bush fire hazard, as they are not large enough to produce fire of an intensity that will threaten dwellings.

This includes:

- bushland areas of less than one hectare that are isolated from large bushland areas; and
- narrow strips of vegetation along road and river corridors.

If you are not sure if there is a bush fire hazard in or around your property, contact your local NSW Rural Fire Service Fire Control Centre or your local council for advice.

STEP 2. DETERMINE WHAT APPROVALS ARE REQUIRED FOR CONSTRUCTING YOUR APZ

If you intend to undertake bush fire hazard reduction works to create or maintain an APZ you must gain the written consent of the landowner.

Subdivided land or construction of a new dwelling

If you are constructing an APZ for a new dwelling you will need to comply with the requirements in *Planning for Bushfire Protection*. Any approvals required will have to be obtained as part of the Development Application process.

Existing asset

If you wish to create or maintain an APZ for an existing structure you may need to obtain an environmental approval. The RFS offers a free environmental assessment and certificate issuing service for essential hazard reduction works. For more information see the RFS document *Application Instructions for a Bush Fire Hazard Reduction Certificate* or contact your local RFS Fire Control Centre to determine if you can use this approval process.

Bear in mind that all work undertaken must be consistent with any existing land management agreements (e.g. a conservation agreement, or property vegetation plan) entered into by the property owner.

If your current development consent provides for an APZ, you do not need further approvals for works that are consistent with this consent.

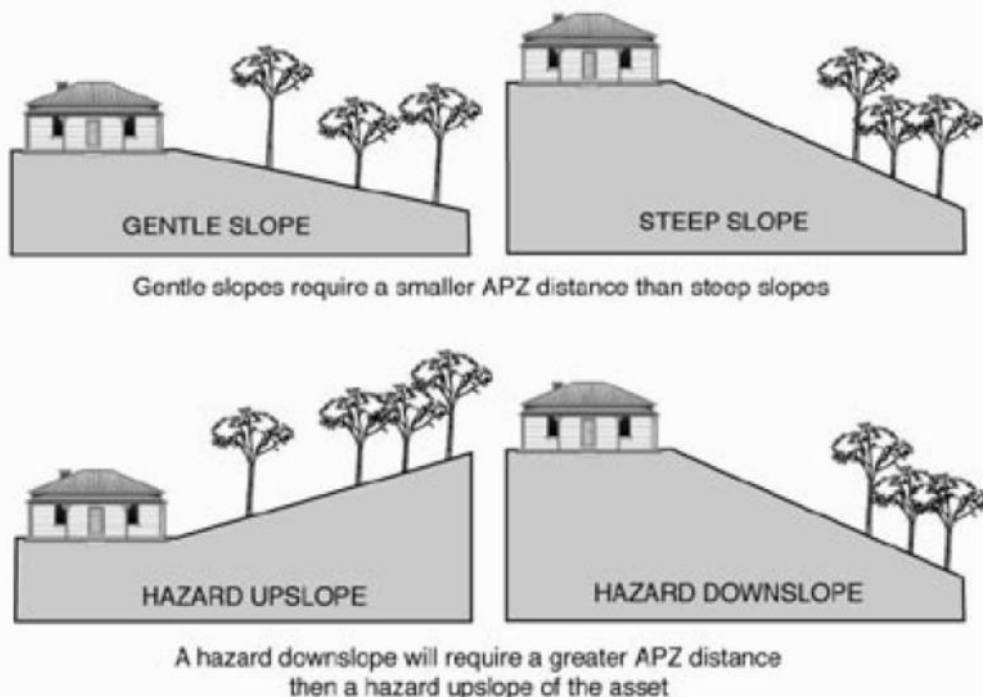
If you intend to burn off to reduce fuel levels on your property you may also need to obtain a Fire Permit through the RFS or NSW Fire Brigades. See the RFS document *Before You Light That Fire* for an explanation of when a permit is required.

STEP 3. DETERMINE THE APZ WIDTH

The size of the APZ required around your asset depends on the nature of the asset, the slope of the area, the type and structure of nearby vegetation and whether the vegetation is managed.

Fires burn faster uphill than downhill, so the APZ will need to be larger if the hazard is downslope of the asset.

5



Different types of vegetation (for example, forests, rainforests, woodlands, grasslands) behave differently during a bush fire. For example, a forest with shrubby understorey is likely to result in a higher intensity fire than a woodland with a grassy understorey and would therefore require a greater APZ width.

A key benefit of an APZ is that it reduces radiant heat and the potential for direct flame contact on homes and other buildings. Residential dwellings require a wider APZ than sheds or stockyards because the dwelling is more likely to be used as a refuge during bush fire.

Subdivided land or construction of a new dwelling

If you are constructing a new asset, the principles of *Planning for Bushfire Protection* should be applied. Your Development Application approval will detail the exact APZ distance required.

Existing asset

If you wish to create an APZ around an existing asset and you require environmental approval, the Bush Fire Environmental Assessment Code provides a streamlined assessment process. Your Bush Fire Hazard Reduction Certificate (or alternate environmental approval) will specify the maximum APZ width allowed.

For further information on APZ widths see *Planning for Bushfire Protection* or the *Bush Fire Environmental Assessment Code* (available on the RFS website), or contact your local RFS Fire Control Centre.

STEP 4. DETERMINE WHAT HAZARD REDUCTION METHOD IS REQUIRED TO REDUCE BUSH FIRE FUEL IN YOUR APZ

The intensity of bush fires can be greatly reduced where there is little to no available fuel for burning. In order to control bush fire fuels you can reduce, remove or change the state of the fuel through several means.

Reduction of fuel does not require removal of all vegetation, which would cause environmental damage. Also, trees and plants can provide you with some bush fire protection from strong winds, intense heat and flying embers (by filtering embers) and changing wind patterns. Some ground cover is also needed to prevent soil erosion.

Fuels can be controlled by:

1. raking or manual removal of fine fuels

Ground fuels such as fallen leaves, twigs (less than 6 mm in diameter) and bark should be removed on a regular basis. This is fuel that burns quickly and increases the intensity of a fire.

Fine fuels can be removed by hand or with tools such as rakes, hoes and shovels.

2. mowing or grazing of grass

Grass needs to be kept short and, where possible, green.

3. removal or pruning of trees, shrubs and understorey

The control of existing vegetation involves both selective fuel reduction (removal, thinning and pruning) and the retention of vegetation.

Prune or remove trees so that you do not have a continuous tree canopy leading from the hazard to the asset. Separate tree crowns by two to five metres. A canopy should not overhang within two to five metres of a dwelling.

Native trees and shrubs should be retained as clumps or islands and should maintain a covering of no more than 20% of the area.

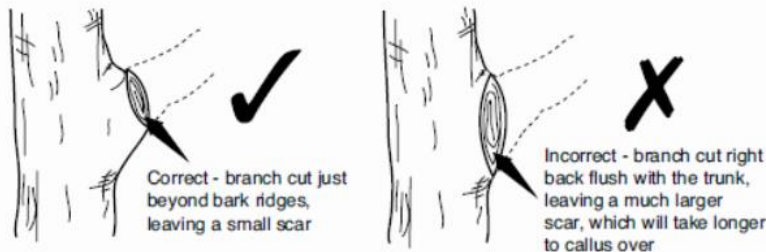
When choosing plants for removal, the following basic rules should be followed:

1. Remove noxious and environmental weeds first. Your local council can provide you with a list of environmental weeds or 'undesirable species'. Alternatively, a list of noxious weeds can be obtained at www.agric.nsw.gov.au/noxweed/;
2. Remove more flammable species such as those with rough, flaky or stringy bark; and
3. Remove or thin understorey plants, trees and shrubs less than three metres in height

The removal of significant native species should be avoided.

Prune in accordance with the following standards:

- Use sharp tools. These will enable clean cuts and will minimise damage to the tree.
- Decide which branches are to be removed before commencing work. Ensure that you maintain a balanced, natural distribution of foliage and branches.
- Remove only what is necessary.
- Cut branches just beyond bark ridges, leaving a small scar.
- Remove smaller branches and deadwood first.



There are three primary methods of pruning trees in APZs:

1. Crown lifting (skirting)

Remove the lowest branches (up to two metres from the ground). Crown lifting may inhibit the transfer of fire between the ground fuel and the tree canopy.

2. Thinning

Remove smaller secondary branches whilst retaining the main structural branches of the tree. Thinning may minimise the intensity of a fire.

3. Selective pruning

Remove branches that are specifically identified as creating a bush fire hazard (such as those overhanging assets or those which create a continuous tree canopy). Selective pruning can be used to prevent direct flame contact between trees and assets.

Your Bush Fire Hazard Reduction Certificate or local council may restrict the amount or method of pruning allowed in your APZ.

See the *Australian Standard 4373 (Pruning of Amenity Trees)* for more information on tree pruning.

4. Slashing and trittering

Slashing and trittering are economical methods of fuel reduction for large APZs that have good access. However, these methods may leave large amounts of slashed fuels (grass clippings etc) which, when dry, may become a fire hazard. For slashing or trittering to be effective, the cut material must be removed or allowed to decompose well before summer starts.

If clippings are removed, dispose of them in a green waste bin if available or compost on site (dumping clippings in the bush is illegal and it increases the bush fire hazard on your or your neighbour's property).

Although slashing and trittering are effective in inhibiting the growth of weeds, it is preferable that weeds are completely removed.

Care must be taken not to leave sharp stakes and stumps that may be a safety hazard.

5. Ploughing and grading

Ploughing and grading can produce effective firebreaks. However, in areas where this method is applied, frequent maintenance may be required to minimise the potential for erosion. Loose soil from ploughed or graded ground may erode in steep areas, particularly where there is high rainfall and strong winds.

6. Burning (hazard reduction burning)

Hazard reduction burning is a method of removing ground litter and fine fuels by fire. Hazard reduction burning of vegetation is often used by land management agencies for broad area bush fire control, or to provide a fuel reduced buffer around urban areas.

Any hazard reduction burning, including pile burns, must be planned carefully and carried out with extreme caution under correct weather conditions. Otherwise there is a real danger that the fire will become out of control. More bush fires result from escaped burning off work than from any other single cause.

It is YOUR responsibility to contain any fire lit on your property. If the fire escapes your property boundaries you may be liable for the damage it causes.

Hazard reduction burns must therefore be carefully planned to ensure that they are safe, controlled, effective and environmentally sound. There are many factors that need to be considered in a burn plan. These include smoke control, scorch height, frequency of burning and cut off points (or control lines) for the fire. For further information see the RFS document *Standards for Low Intensity Bush Fire Hazard Reduction Burning*, or contact your local RFS for advice.

7. Burning (pile burning)

In some cases, where fuel removal is impractical due to the terrain, or where material cannot be disposed of by the normal garbage collection or composted on site, you may use pile burning to dispose of material that has been removed in creating or maintaining an APZ.

For further information on pile burning, see the RFS document *Standards for Pile Burning*.

In areas where smoke regulations control burning in the open, you will need to obtain a Bush Fire Hazard Reduction Certificate or written approval from Council for burning. During the bush fire danger period a Fire Permit will also be required. See the RFS document *Before You Light that Fire* for further details.

STEP 5. TAKE MEASURES TO PREVENT SOIL EROSION

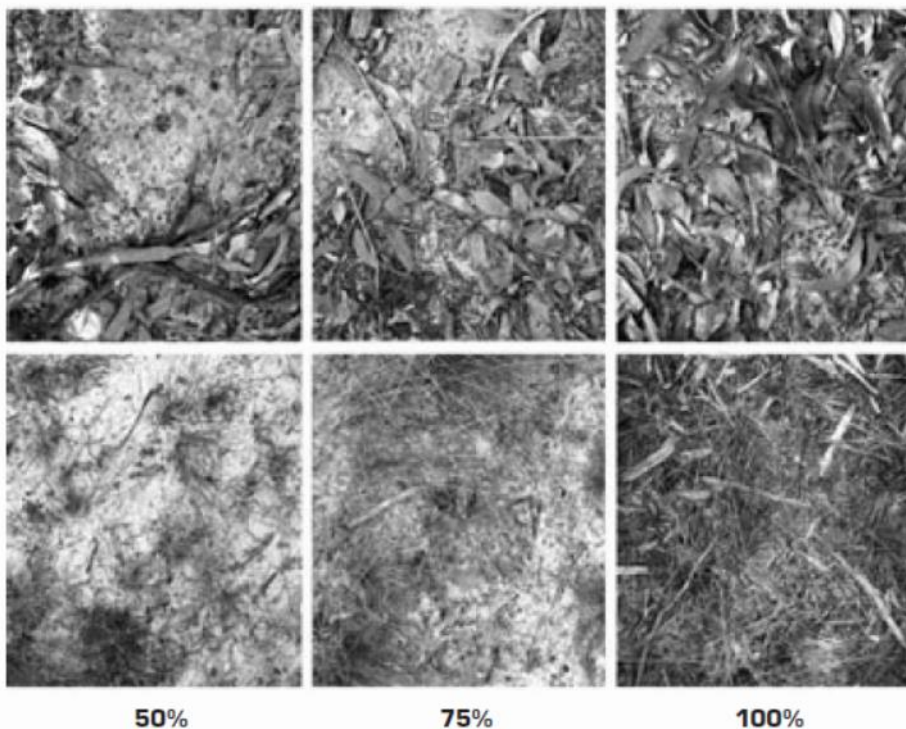
While the removal of fuel is necessary to reduce a bush fire hazard, you also need to consider soil stability, particularly on sloping areas.

Soil erosion can greatly reduce the quality of your land through:

- loss of top soil, nutrients, vegetation and seeds
- reduced soil structure, stability and quality
- blocking and polluting water courses and drainage lines

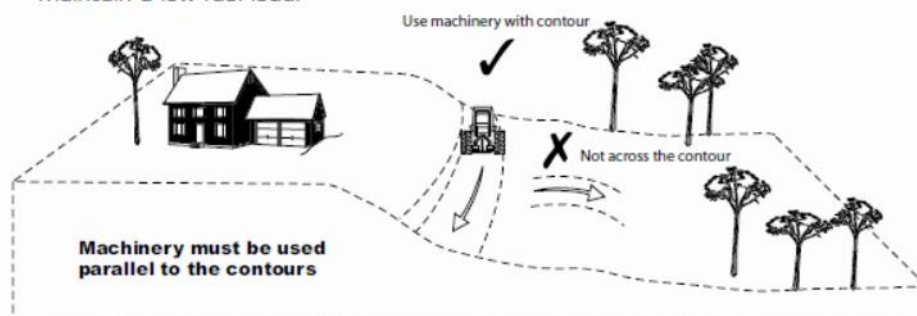
A small amount of ground cover can greatly improve soil stability and does not constitute a significant bush fire hazard. Ground cover includes any material which directly covers the soil surface such as vegetation, twigs, leaf litter, clippings or rocks. A permanent ground cover should be established (for example, short grass). This will provide an area that is easy to maintain and prevent soil erosion.

When using mechanical hazard reduction methods, you should retain a ground cover of at least 75% to prevent soil erosion. However, if your area is particularly susceptible to soil erosion, your Hazard Reduction Certificate may require that 90% ground cover be retained.



Ground Cover

To reduce the incidence of soil erosion caused by the use of heavy machinery such as ploughs, dozers and graders, machinery must be used parallel to the contours. Vegetation should be allowed to regenerate, but be managed to maintain a low fuel load.



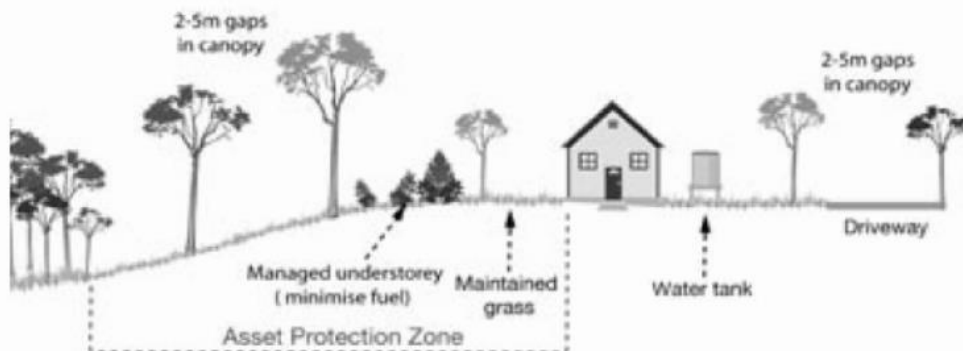
STEP 6. ONGOING MANAGEMENT AND LANDSCAPING

Your home and garden can blend with the natural environment and be landscaped to minimise the impact of fire at the same time. To provide an effective APZ, you need to plan the layout of your garden to include features such as fire resistant plants, radiant heat barriers and windbreaks.

Layout of gardens in an APZ

When creating and maintaining a garden that is part of an APZ you should:

- ensure that vegetation does not provide a continuous path to the house;
- remove all noxious and environmental weeds;
- plant or clear vegetation into clumps rather than continuous rows;
- prune low branches two metres from the ground to prevent a ground fire from spreading into trees;
- locate vegetation far enough away from the asset so that plants will not ignite the asset by direct flame contact or radiant heat emission;
- plant and maintain short green grass around the house as this will slow the fire and reduce fire intensity. Alternatively, provide non-flammable pathways directly around the dwelling;
- ensure that shrubs and other plants do not directly abut the dwelling. Where this does occur, gardens should contain low-flammability plants and non flammable ground cover such as pebbles and crush tile; and
- avoid erecting brush type fencing and planting "pencil pine" type trees next to buildings, as these are highly flammable.



Removal of other materials

Woodpiles, wooden sheds, combustible material, storage areas, large quantities of garden mulch, stacked flammable building materials etc. should be located away from the house. These items should preferably be located in a designated cleared location with no direct contact with bush fire hazard vegetation.

Other protective features

You can also take advantage of existing or proposed protective features such as fire trails, gravel paths, rows of trees, dams, creeks, swimming pools, tennis courts and vegetable gardens as part of the property's APZ.

PLANTS FOR BUSH FIRE PRONE GARDENS

When designing your garden it is important to consider the type of plant species and their flammability as well as their placement and arrangement.

Given the right conditions, all plants will burn. However, some plants are less flammable than others.

Trees with loose, fibrous or stringy bark should be avoided. These trees can easily ignite and encourage the ground fire to spread up to, and then through, the crown of the trees.

Plants that are less flammable, have the following features:

- high moisture content
- high levels of salt
- low volatile oil content of leaves
- smooth barks without "ribbons" hanging from branches or trunks; and
- dense crown and elevated branches.

When choosing less flammable plants, be sure not to introduce noxious or environmental weed species into your garden that can cause greater long-term environmental damage.

For further information on appropriate plant species for your locality, contact your local council, plant nurseries or plant society.

If you require information on how to care for fire damaged trees, refer to the Firewise brochure *Trees and Fire Resistance; Regeneration and care of fire damaged trees*.

WIND BREAKS

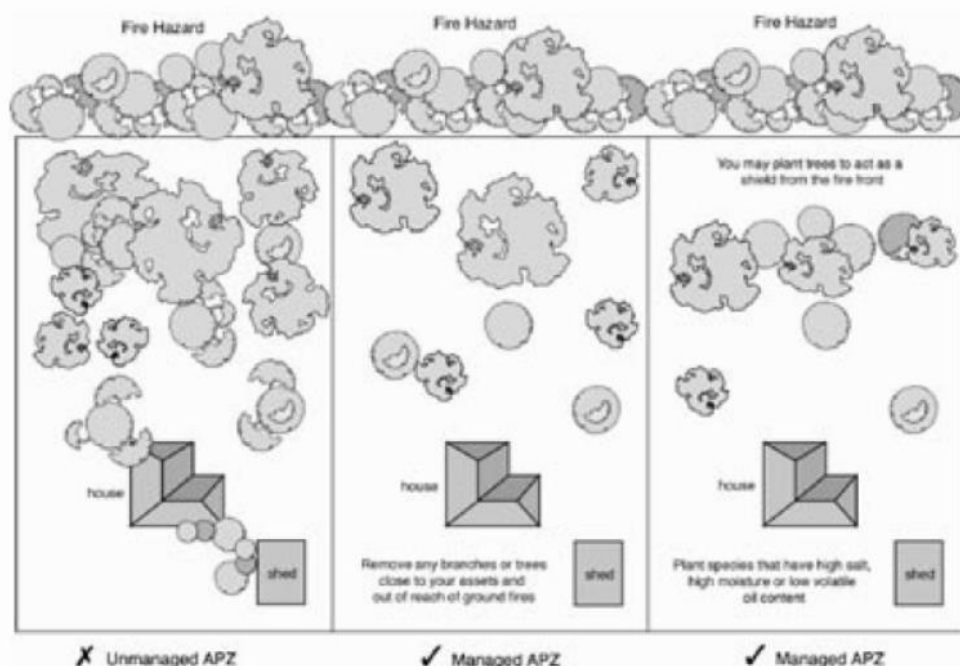
Rows of trees can provide a wind break to trap embers and flying debris that could otherwise reach the house or asset.

You need to be aware of local wind conditions associated with bush fires and position the wind break accordingly. Your local RFS Fire Control Centre can provide you with further advice.

When choosing trees and shrubs, make sure you seek advice as to their maximum height. Their height may vary depending on location of planting and local conditions. As a general rule, plant trees at the same distance away from the asset as their maximum height.

When creating a wind break, remember that the object is to slow the wind and to catch embers rather than trying to block the wind. In trying to block the wind, turbulence is created on both sides of the wind break making fire behaviour erratic.

11



HOW CAN I FIND OUT MORE?

The following documents are available from your local Fire Control Centre and from the NSW RFS website at www.rfs.nsw.gov.au.

- Before You Light That Fire
- Standards for Low Intensity Bush Fire Hazard Reduction Burning
- Standards for Pile Burning
- Application Instructions for a Bush Fire Hazard Reduction Certificate

If you require any further information please contact:

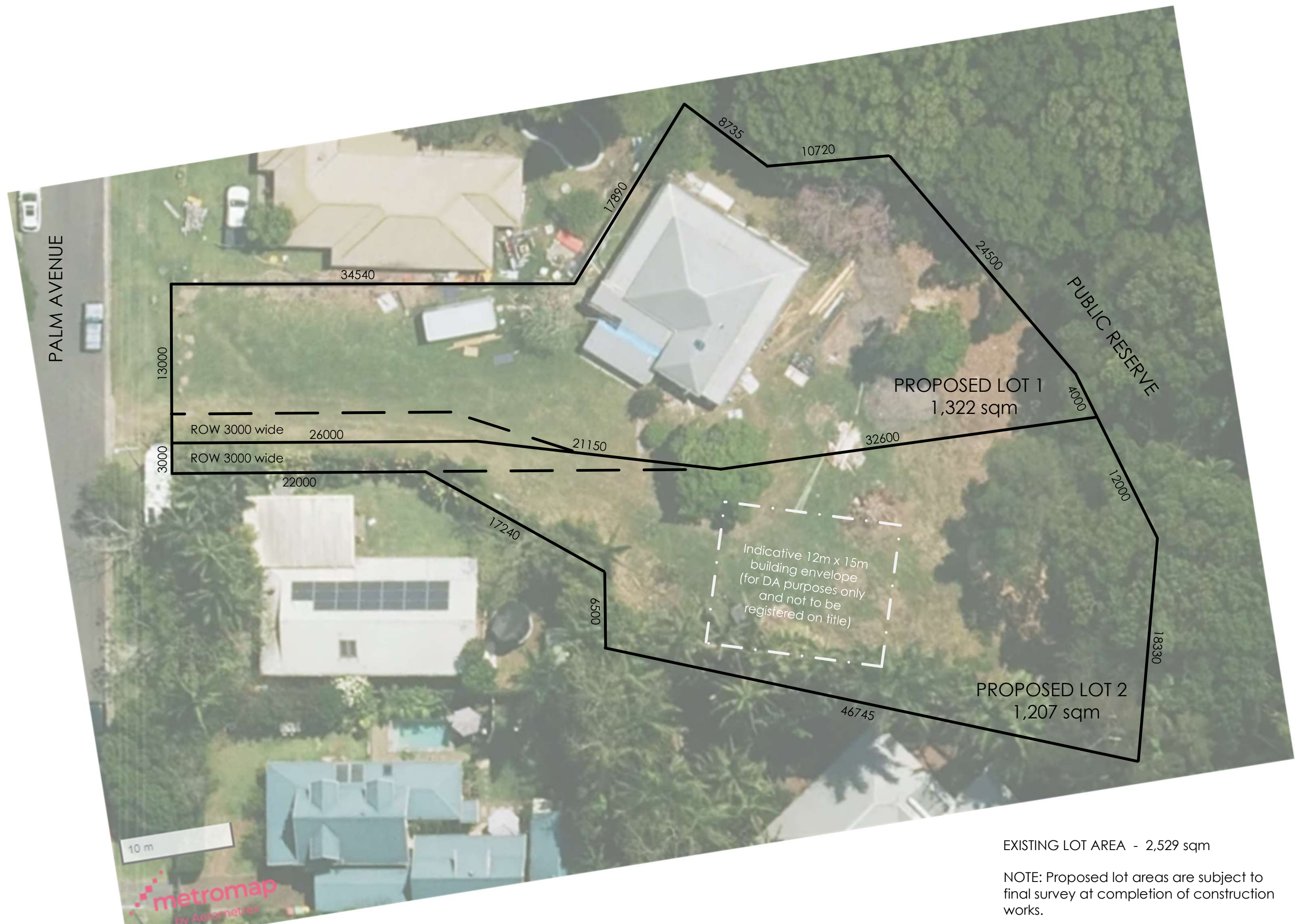
- your local NSW Rural Fire Service Fire Control Centre.
Location details are available on the RFS website or
- call the NSW RFS Enquiry Line 1800 679 737
(Monday to Friday, 9am to 5pm), or
- the NSW RFS website at www.rfs.nsw.gov.au.

**Produced by the NSW Rural Fire Service, Locked Mail Bag 17,
GRANVILLE, NSW 2142. Ph. 1800 679 737**
www.rfs.nsw.gov.au

Printed on 100% Recycled Cyclus Offset paper.

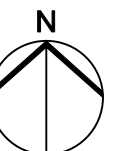
Annexure C

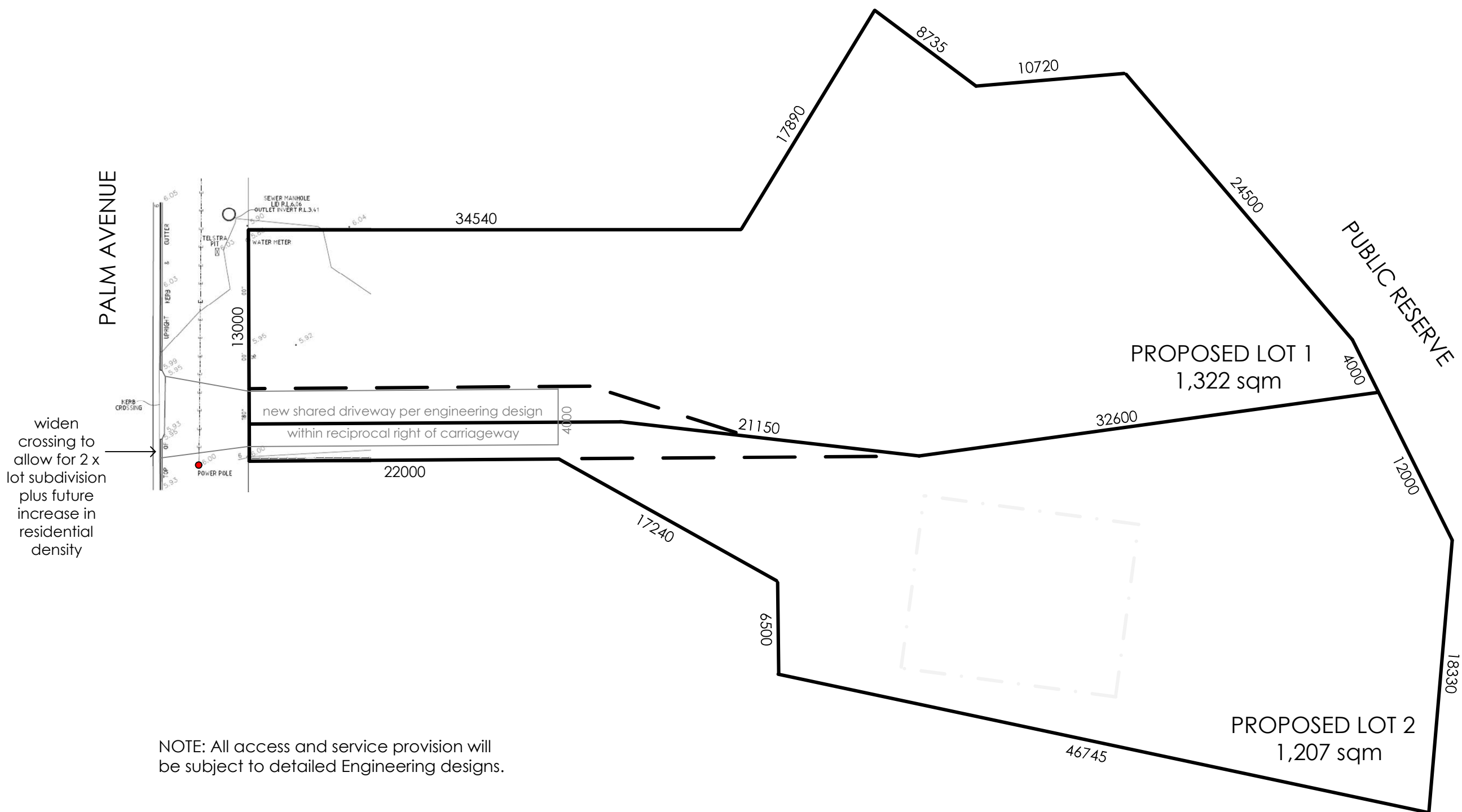
Development Plans



EXISTING LOT AREA - 2,529 sqm

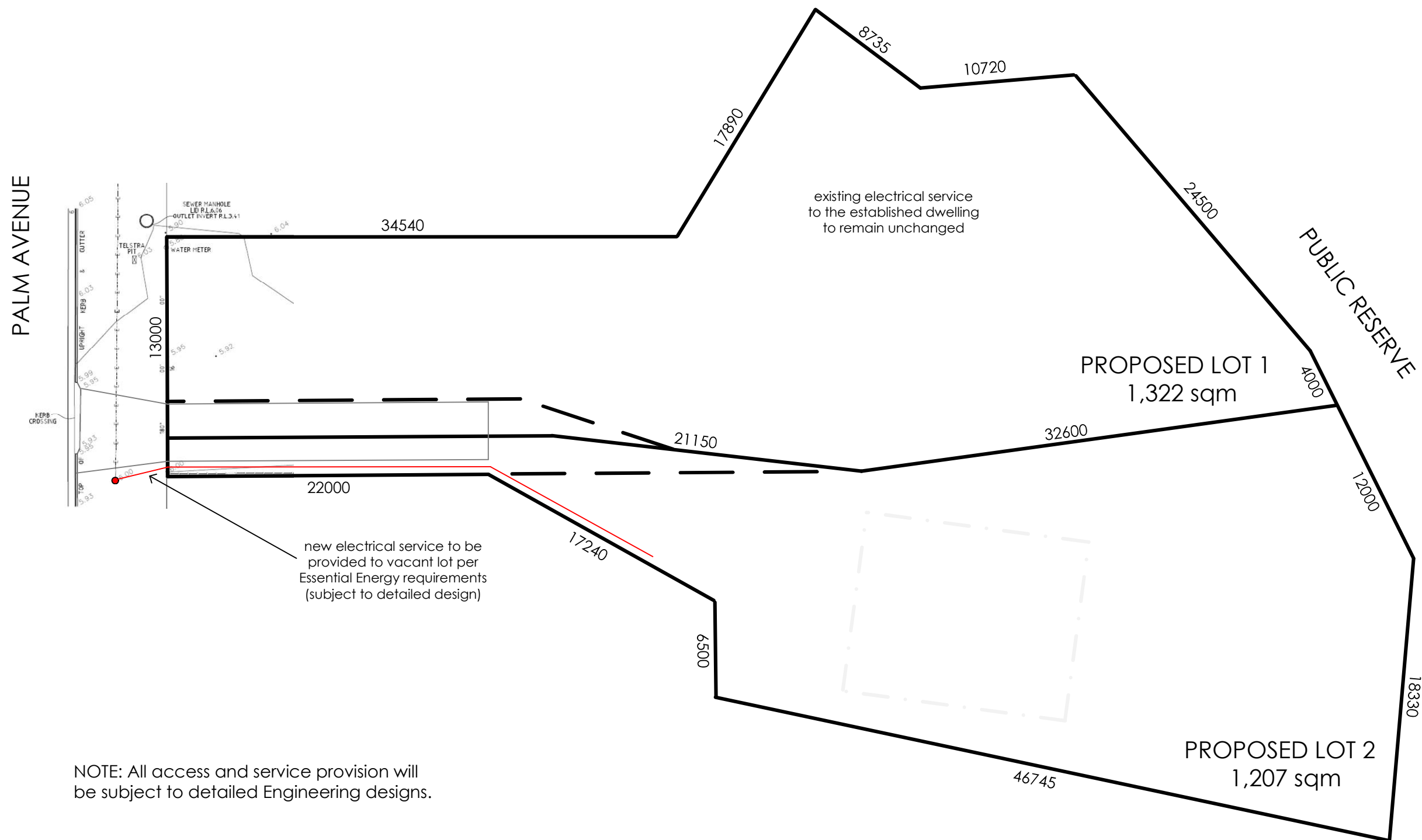
NOTE: Proposed lot areas are subject to final survey at completion of construction works.



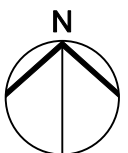


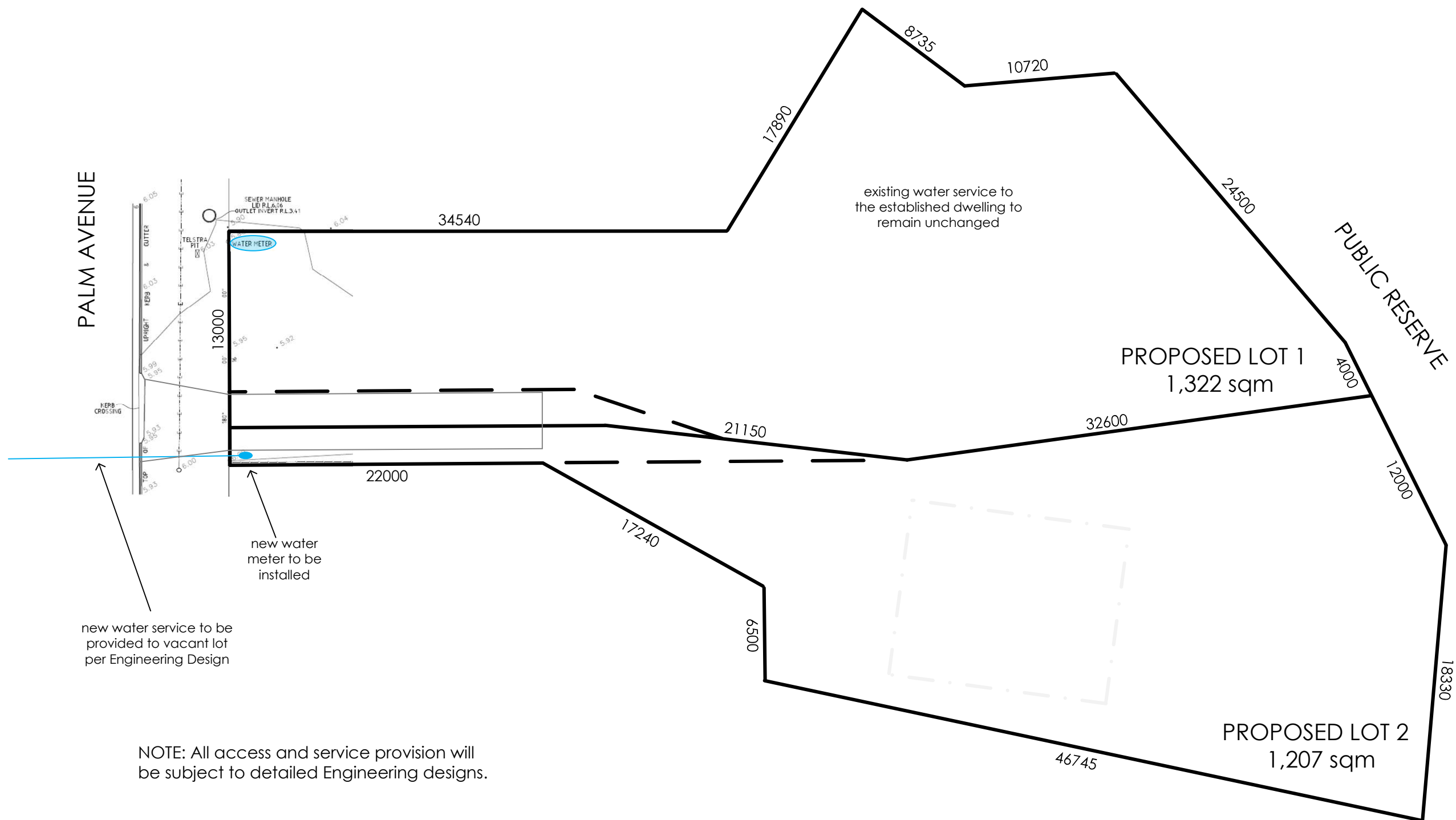
0 4 8 12 16 m



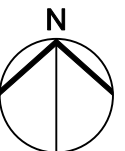


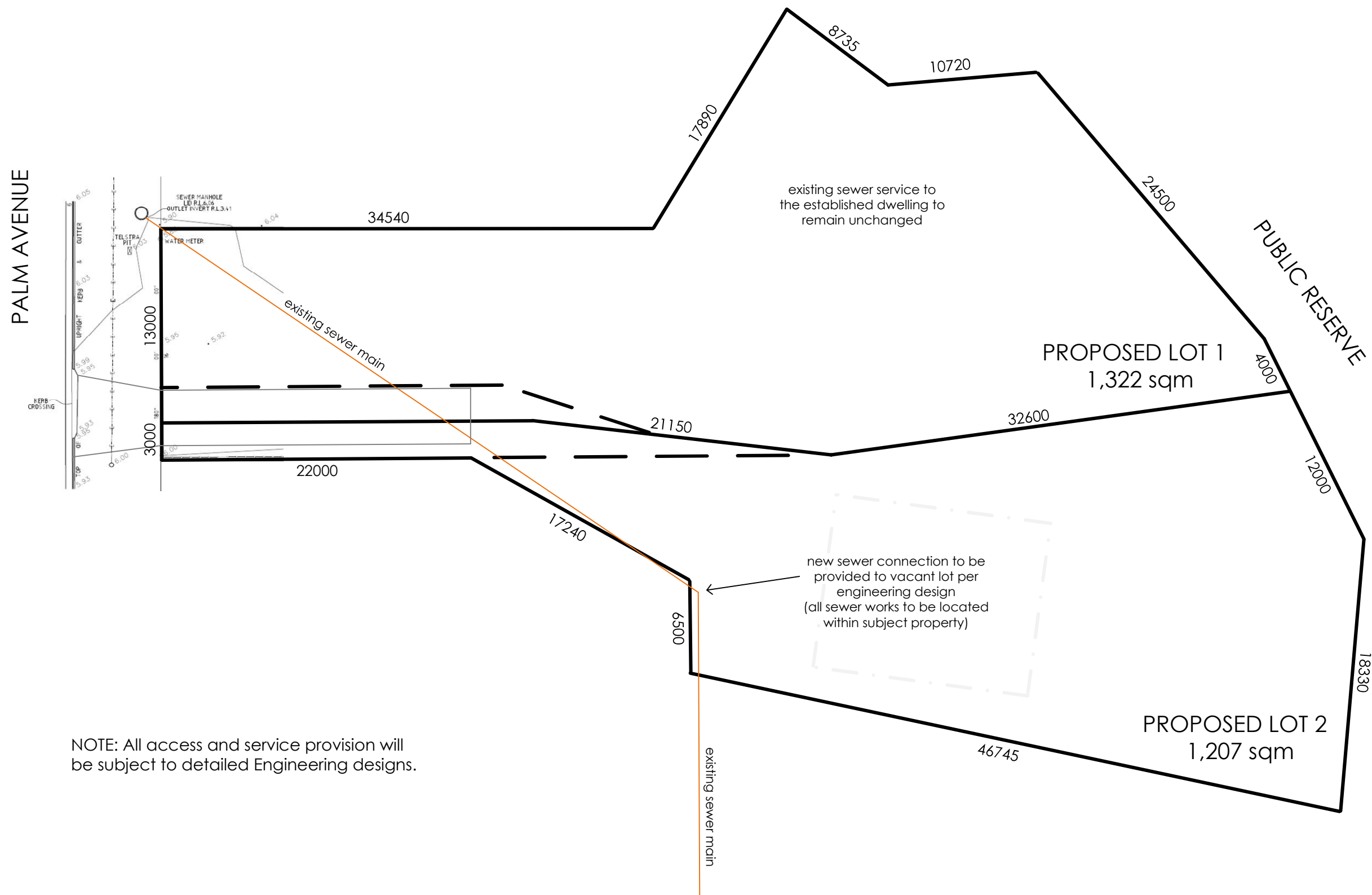
0 4 8 12 16 m





0 4 8 12 16 m





0 4 8 12 16 m

