



Bushfire Management Plan


Proposed Subdivision Kennedy Bay - STAGE 1

Lot 3020 Kennedy Bay Key, Kennedy Bay
City of Rockingham

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Document Information

Prepared for: Rowe Group
Project Name: Kennedy Bay Subdivision Stage 1
Site Address: Lot 3020 Kennedy Bay Key, Kennedy Bay
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Bushfire Safety Consulting Pty Ltd

I hereby declare that I am a BPAD accredited bushfire practitioner.	
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Signature	
Date	14/06/2022



Document Control

Bushfire Management Plan – Kennedy Bay Subdivision Stage 1			
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V5	Final for submission	Rohan Carboon (BPAD 32160)	15/06/2022

Front cover photo: Development Site

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EXECUTIVE SUMMARY

This Bushfire Management Plan (BMP) has been prepared to support a proposed 268 lot subdivision over a portion of Lot 3020 Kennedy Bay Keys, Kennedy Bay (the 'site'). This is the first stage of a larger subdivision that is planned for the lot. The vast majority of proposed lots are residential, with some retail and commercial lots in the Town Centre. The site is surrounded by Class D Scrub and Class C Shrubland vegetation in a Foreshore Reserve to the west, Class D Scrub and Class C Shrubland vegetation on land to be developed in the future to the north, predominately managed golf course vegetation with strips of revegetation between the fairways and developed residential areas to the south.

The subdivision application includes plans for five areas of Public Open Space (POS) throughout the site which will generally include irrigated turf, garden beds, play spaces, footpaths, shelters, seating and picnic spaces.

The area is reticulated and a second vehicular access way will be provided to ensure all residents have two access ways to two different destinations. There is good vehicular access.

A Method 1 BAL assessment has been undertaken to determine predicted radiant heat flux levels on the site and no lots are exposed to predicted radiant heat flux levels exceeding 29kW/m².

The proposed subdivision can achieve all of the Acceptable Solutions and Performance Principles in the Guidelines for Planning in Bushfire Prone Areas V1.4 (2021).

The developer is responsible for ensuring requirements for the provision of water and vehicular access are met and maintaining the Asset Protection Zone until lots are sold. Fuel loads and responsibility for APZ standards then transfers to the new owners / occupiers of the land.

It is expected that the implementation of this BMP will reduce the threat to residents, the public and fire fighters in the area addressed by this BMP. The proposal complies with the *State Planning Policy No. 3.7: Planning in Bushfire Prone Areas (SPP 3.7)* and the *Guidelines for Planning in Bushfire Prone Areas* (WAPC 2021 V1.4).

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1 PROPOSAL DETAILS

A 295 lot subdivision is proposed for a portion of Lot 3020 Kennedy Bay Keys, Kennedy Bay (herein referred to as the 'site' (**Figure 1**)). The site will contain a small number of retail and commercial lots and 295 residential lots. It is the first stage of a larger subdivision planned for the entirety of Lot 3020. The subdivision proposal for the site also includes a number of internal Public Open Space (POS) areas and significant landscaped areas in the coastal foreshore and on the golf course interface.

Internal areas of POS will include irrigated turf, garden beds, play spaces, footpaths, shelters, seating and picnic spaces.

A grid like pattern of public roads and six laneways are proposed within the site to provide direct driveway access to proposed lots. These feed to Kennedy Bay Keys to the south which then provides egress to the south-east, as well as a temporary Emergency Access Way that links the north western corner of the site with Knutsford Crescent in the established residential area east of the site.

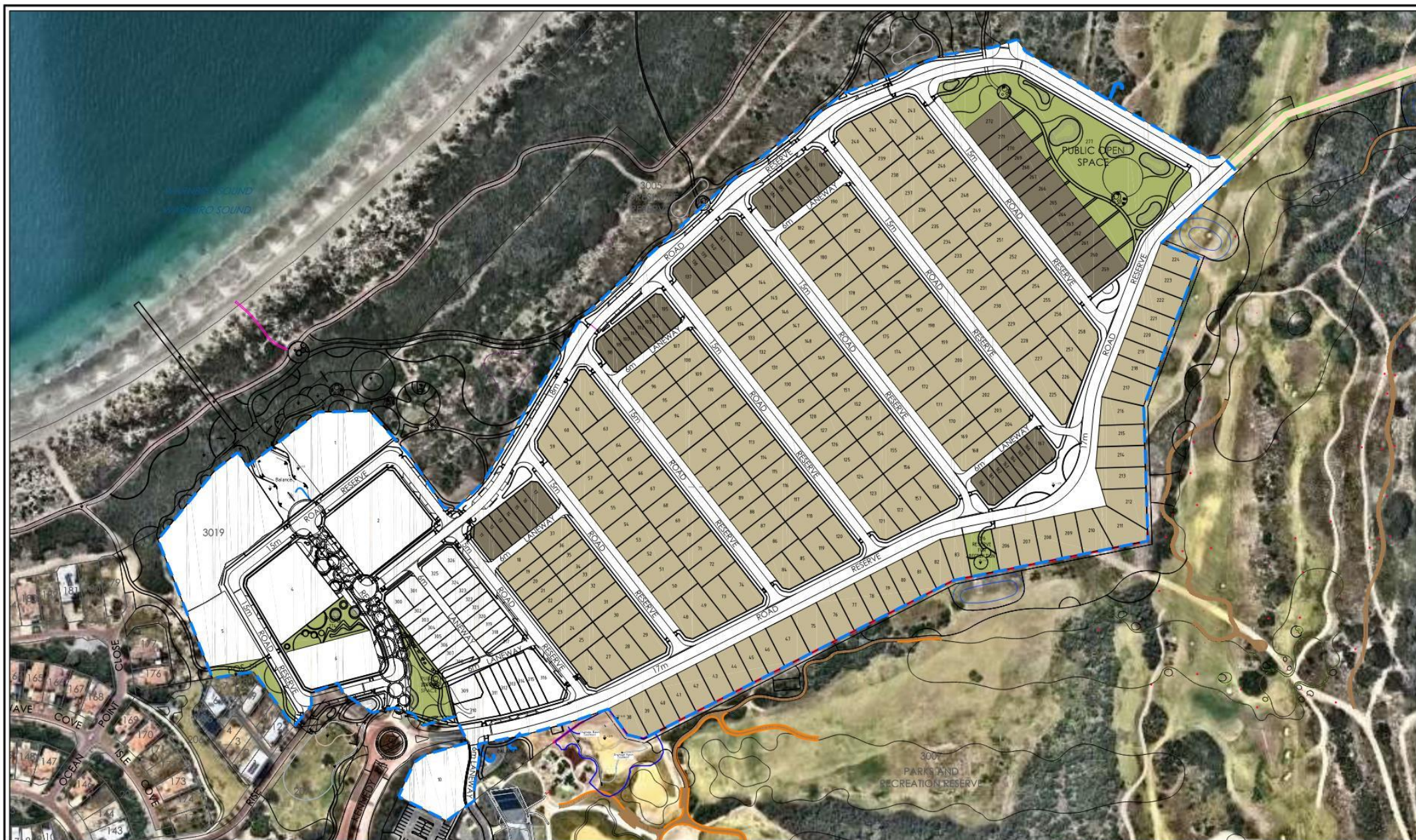
Residential development occurs on land immediately to the south, with Class D Scrub and Class C Shrubland in a Foreshore Reserve to the west and on undeveloped land to the north. The adjoining golf course is currently being redeveloped with proposed new fairways, landscaping and revegetation occurring.

The site occupies the area between the two developed sections of Port Kennedy, the coastal boat ramp and residential estate with the larger Port Kennedy area on Warnbro Sound Avenue to the east (**Figure 2**).

The site is zoned 'Development' under the City of Rockingham Town Planning Scheme No.2 (TPS2).

This Bushfire Management Plan (BMP) has been prepared to support the subdivision application. It addresses future subdivision conditions by providing responses to the performance criteria in the *Guidelines for Planning in Bushfire Prone Areas V1.4* (WAPC et.al. 2021).

If there is a bushfire within or near the site, implementing this BMP will reduce the threat to residents, property and emergency response personnel.



Location details: Lot 3020 Port Kennedy Drive
Port Kennedy - Stage 1
Assessment date: April, 2021
Prepared by: Bushfire Safety Consulting
Accreditation level: Level 3 BPAD Practitioner
Accreditation number: BPAD 23160
Accreditation expiry date: 31st January, 2023
Date aerial photo: October 2021

FIGURE 1 PROPOSED STAGE 1 SUBDIVISION

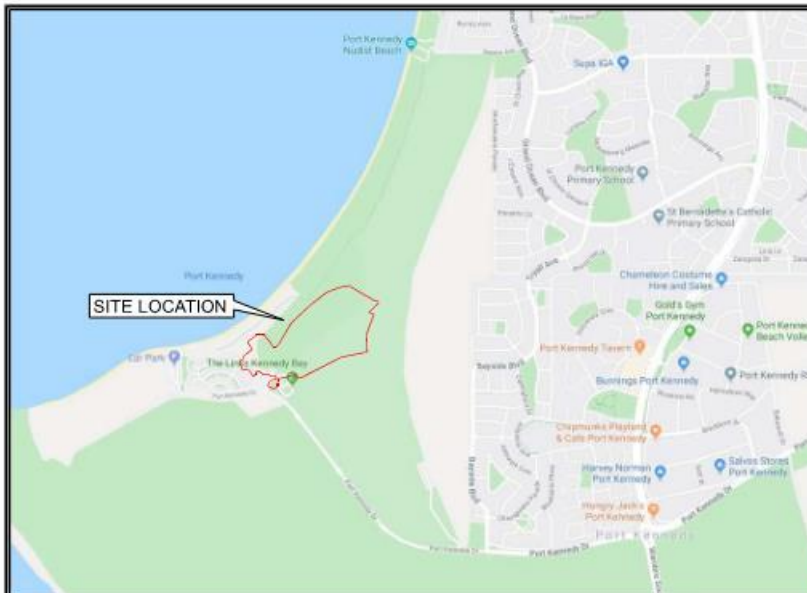
SCALE 1:2500 @ A3
DATE: MAY 2022



LEGEND
SUBJECT SITE

SOURCE OF PHOTOGRAPHY: NEARMAP

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FIGURE 2
SITE LOCATION PLAN



LEGEND



Base mapping supplied by Nearmap
& Google Maps



1.1 Policy and Guidelines

1.1.1 Application of SPP 3.7

The *State Planning Policy No. 3.7: Planning in Bushfire Prone Areas (SPP 3.7)* provides the foundation for land use planning to address bushfire risk management in Western Australia. It is used to inform and guide decision makers, referral agencies and land owners / proponents to help achieve acceptable bushfire protection outcomes.

The policy contains objectives and policy measures as well as reference to the Bushfire Protection Criteria as outlined in the Guidelines for Planning in Bushfire Prone Areas (WAPC 2021 V1.2; the Guidelines). The policy applies to this subdivision proposal because the subdivision application is located in the designated Bushfire Prone Area on the WA map of Bushfire Prone Areas (**Figure 3**).

The following policy measures will need to be comply with SPP 3.7:

Table 1. Policy measures

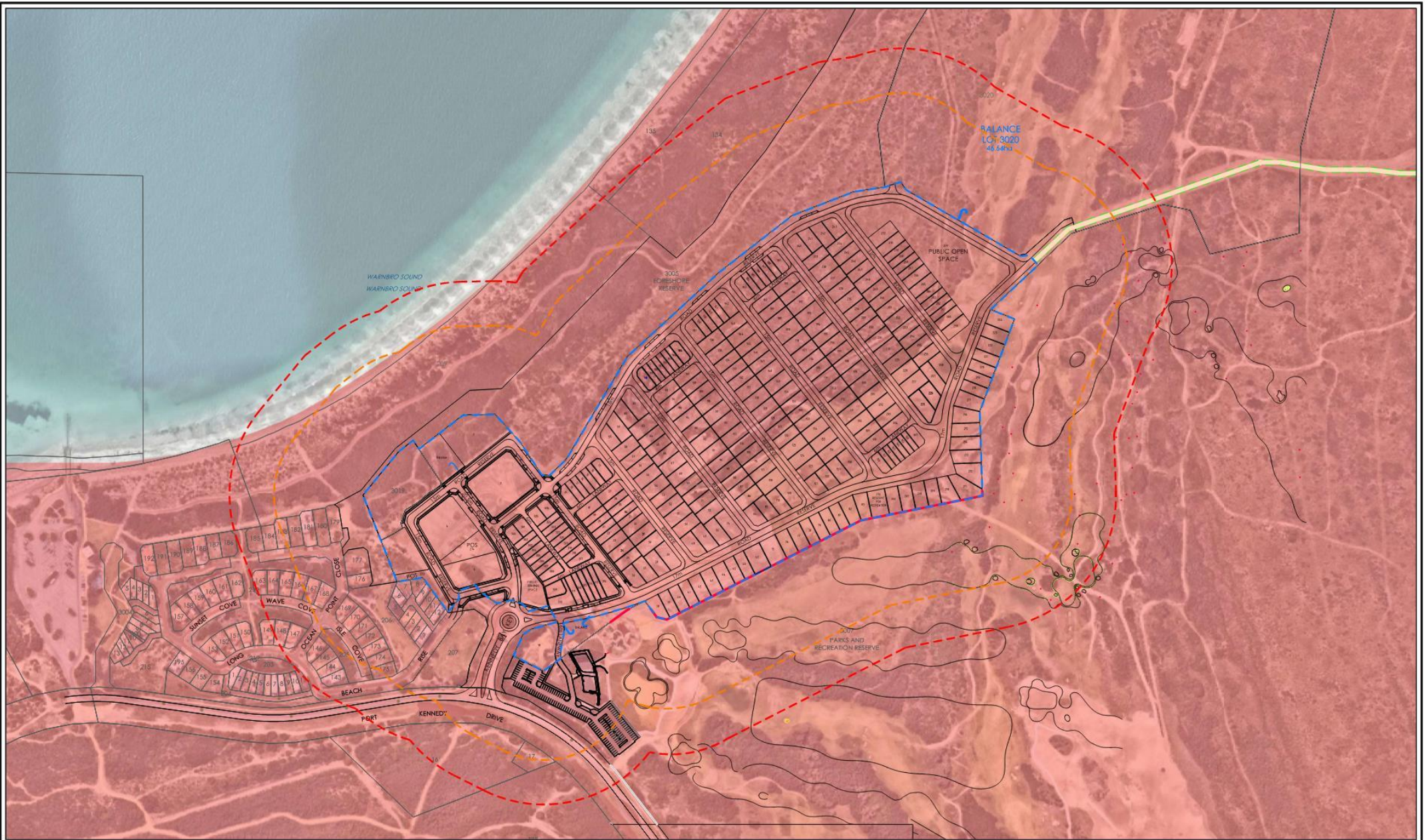
Policy Measure 6.2	The subdivision application is located within a designated bushfire prone area and will have a Bushfire Hazard Level above low and a Bushfire Attack Level rating above BAL-LOW.
Policy Measure 6.4	Policy 6.4 applies meaning the subdivision proposal will be accompanied by: <ul style="list-style-type: none"> - BAL Contour Plan - Lot specific BAL ratings - Identification of relevant issues; and - Demonstration of compliance with the guidelines

The subdivision proposal does not propose vulnerable or high-risk land use and is not considered as minor or unavoidable development under *SPP 3.7*. If a future Development Application proposed high risk or a vulnerable development compliance with SPP 3.7 will be assessed.

1.1.2 Guidelines for Planning in Bushfire Prone Areas V1.3 (2017)

The Department of Planning have released the *Guidelines for Planning in Bushfire Prone Areas V1.4 (2021)*. The requirements of this document are accommodated within this BMP.

The *Guidelines for Planning in Bushfire Prone Areas V 1.4(2021)* is intended to inform and guide decision makers, referral authorities and proponents to achieve acceptable bushfire protection outcomes, including expectations at the different stages of planning.



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FIGURE 3
BUSHFIRE PRONE AREAS

SCALE 1:4000 @ A3
DATE: MAY 2022



LEGEND

- ▬ SUBJECT SITE
- - - ASSESSMENT AREA (150m) FROM THE EXTERNAL BOUNDARY OF THE SUBJECT SITE
- - - ASSESSMENT AREA (100m) FROM THE EXTERNAL BOUNDARY OF THE SUBJECT SITE
- ▬ BUSHFIRE PRONE AREAS

SOURCE OF PHOTOGRAPHY: NEARMAP



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2 ENVIRONMENTAL CONSIDERATIONS

2.1 Native Vegetation – Modification and Clearing

The development site proposed for residential and retail use and Public Open Spaces is sited on existing golf course links and areas of degraded regrowth vegetation composed of Class D Scrub and Class C Shrubland. Approximately 40% of the site is located in existing golf course fairways.

There are no environmental restrictions to limit a future development on the site. A new Golf Course clubhouse is currently under constructions and redevelopment of the golf course links and fairways will be soon underway.

The golf course clubhouse development has been recently completed and the golf course fairways is under management control of the proponent, formalised with a 66 year lease that formed part of Sale and Development Agreement. There is a Kennedy Bay Ministerial Statement that is the formal environmental approval for the Structure Plan project.

This statement identifies that the proponent has permission to implement the Kennedy Bay proposal which includes an 80.3ha golf course area (location shown on Figure 1) which involves vegetation clearing within this golf course site.

Schedule 6 of the *Environmental Protection Act 1986* identifies 'Clearing for which a clearing permit is not required'. Clause 2 of Schedule 6 identifies that 'Clearing that is done – (a) in the in the implementation of a proposal in accordance with an implementation agreement or decision' (i.e. Ministerial Statement) is an action for which a clearing permit is not required.

On this basis, authorisation is provided to clear vegetation from within the golf course site without needing a clearing permit.

2.2 Re-vegetation/Landscape Plans

There is no planned revegetation within the site, however several POS areas are proposed within the site. The Golf Course interface landscape Concept and Masterplan is found in Appendices 4 and 5. Significant work has been undertaken with the Landscape Architects to ensure the landscaped areas are established and managed in way that minimise the accumulation of dry find fuels that would support increasing fire behaviour.

The plans demonstrate they will contain low threat vegetation including irrigated turf, landscape trees, garden beds, play spaces, footpaths, shelters, seating and picnic spaces. The establishment and maintenance of all landscaped low threat POS areas will involve the following in perpetuity:

- Under pruning of shrubs, scrub and trees of all fine fuels (<6mm) 2 metres from ground level
- Annually removing leaf litter, accumulated fine fuels and dead plants and/or plant material.
- Keeping garden beds irrigated and turf areas mown and grass green.

- Pruning to keep clumps of trees and shrubs separated from one another.
- Removal of weeds and regenerating Eucalypts, Acacia and other native plants not intended to be included as part of the landscape plans.

The golf course interface has been designed with low threat vegetation within 35 metres of the residential lots.

3 BUSHFIRE ASSESSMENT RESULTS

Bushfires are common in the City of Rockingham and local brigades respond to numerous bushfires in the district annually. Given the bushfire threat in the area this BMP plays a critical role in ensuring that the development of the land appropriately mitigates the risk from bushfire.

3.1 Assessment Inputs


The methodology used to assess the site is outlined in the *Guidelines for Planning in Bushfire Prone Areas V1.4 (2021)*. The lot layout is known and a strategic level bushfire hazard assessment is not required. A BAL Contour map is provided in accordance with Appendix 3 of the guidelines.


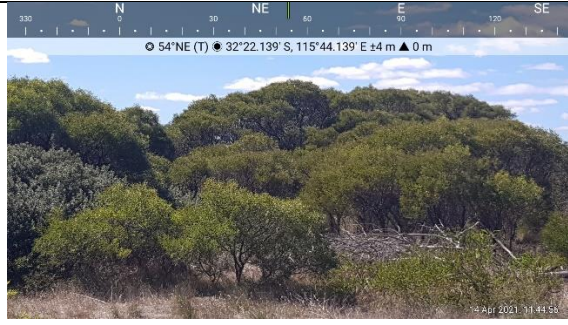
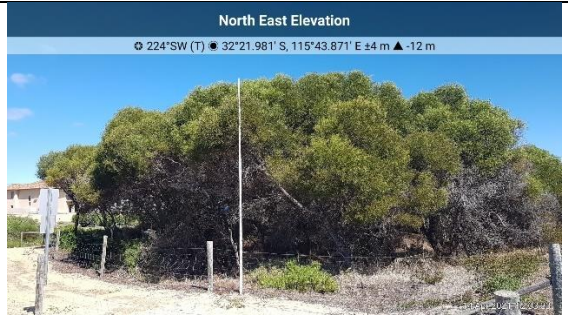


Assessing bushfire threat at the site-specific level accounts for the predominant class of vegetation on the site and surrounding area for a minimum of 150 m, as shown in **Figure 4**.


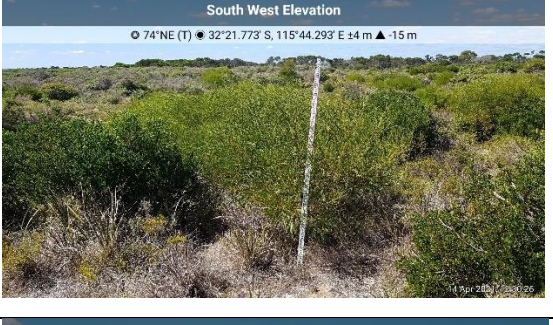
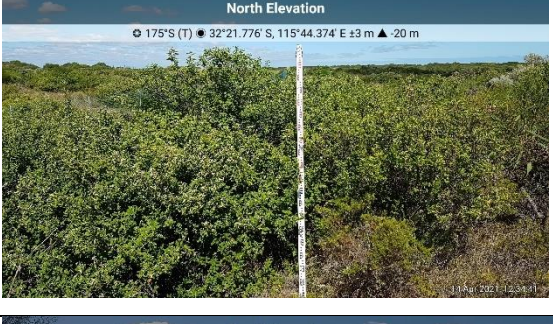
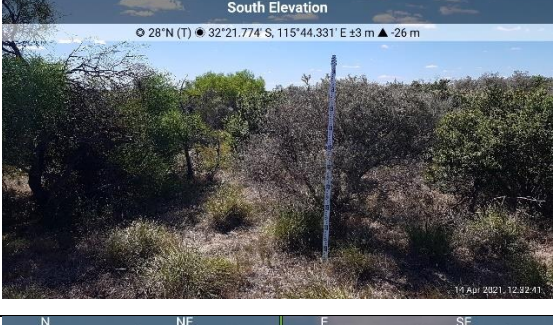

3.1.1 Vegetation Classification

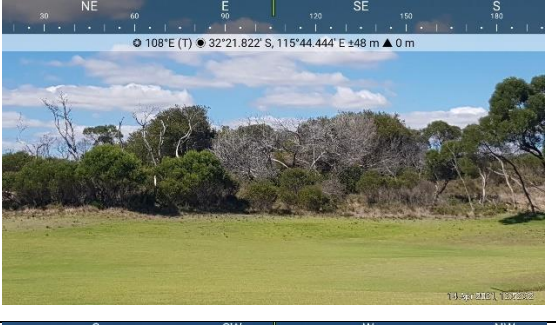




Vegetation within and surrounding the site consists predominately of Class D Scrub and low threat irrigated and mown turf on golf course fairways and greens. Areas of existing residential lots occurs to the north-east and south-west which contain managed low threat vegetation including reticulated lawn and cultivated gardens.



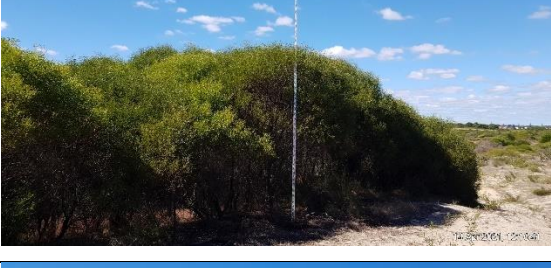
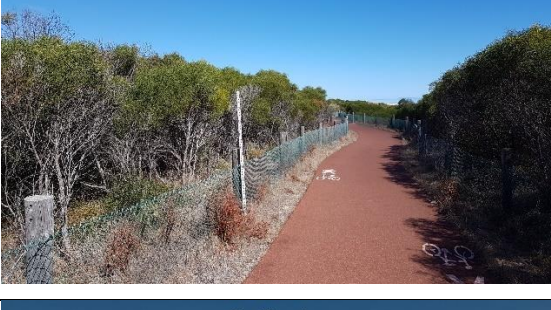

The vegetation plots on and surrounding the site and within 150 metres of the site boundary are found in Figure 4 with plot descriptions below.




<p>Photo ID: 1</p> <p>Plot Number: 1</p> <p>Vegetation classification or exclusion clause: Class D Scrub</p> <p>Description/justification of classification: Permanent scrub vegetation 5m high south of Kennedy Drive in the reserve (Staff 5m high).</p>	
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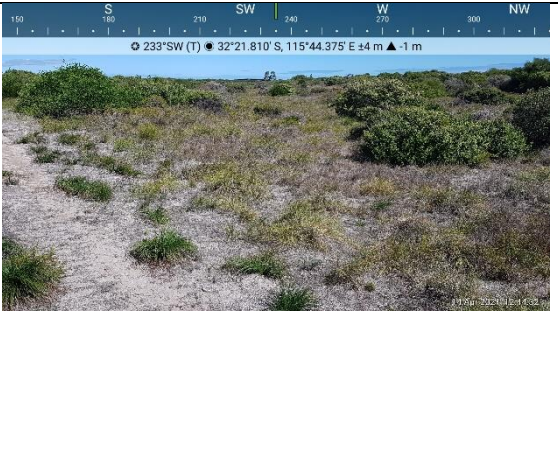
<p>Photo ID: 2</p> <p>Plot Number: 1</p> <p>Vegetation classification or exclusion clause: Class D Scrub</p> <p>Description/justification of classification: Permanent scrub vegetation 3m high south of Kennedy Drive in the reserve (Staff 5m high).</p>	
<p>Photo ID: 3</p> <p>Plot Number: 1</p> <p>Vegetation classification or exclusion clause: Class D Scrub</p> <p>Description/justification of classification: Scrub species dominated by Acacia genus up to 5m tall.</p>	
<p>Photo ID: 4</p> <p>Plot Number: 1</p> <p>Vegetation classification or exclusion clause: Class D Scrub</p> <p>Description/justification of classification: Permanent scrub vegetation 5m high in the Foreshore Reserve west of the site (Staff 5m high).</p>	
<p>Photo ID: 5</p> <p>Plot Number: 1</p> <p>Vegetation classification or exclusion clause: Class D Scrub</p> <p>Description/justification of classification: Permanent scrub vegetation 5m high in the Foreshore Reserve west of the site (Staff 5m high).</p>	
<p>Photo ID: 6</p> <p>Plot Number: 1</p> <p>Vegetation classification or exclusion clause: Class D Scrub</p> <p>Description/justification of classification: Permanent scrub vegetation 4m high in the Foreshore Reserve west of the site.</p>	



<p>Photo ID: 7</p> <p>Plot Number: 1</p> <p>Vegetation classification or exclusion clause: Class D Scrub</p> <p>Description/justification of classification: Permanent scrub vegetation 2-3m high in the Foreshore Reserve west of the site with scattered areas of tall shrubs. (Staff 2m high).</p>	
<p>Photo ID: 8</p> <p>Plot Number: 1</p> <p>Vegetation classification or exclusion clause: Class D Scrub</p> <p>Description/justification of classification: Permanent scrub vegetation 2-3m high in the Foreshore Reserve west of the site with scattered areas of tall shrubs. (Staff 2m high).</p>	
<p>Photo ID: 9</p> <p>Plot Number: 1</p> <p>Vegetation classification or exclusion clause: Class D Scrub</p> <p>Description/justification of classification: Acacia scrub vegetation 2-3m high in the future development stages. Is a threat to stage until permanently removed (Staff 2m high).</p>	
<p>Photo ID: 10</p> <p>Plot Number: 1</p> <p>Description/justification of classification: Class D Scrub</p> <p>Description/justification of classification: Acacia scrub vegetation 2-3m high in the future development stages. Is a threat to stage until permanently removed (Staff 2m high).</p>	
<p>Photo ID: 11</p> <p>Plot Number: 1</p> <p>Description/justification of classification: Class D Scrub</p> <p>Description/justification of classification: Tall acacia scrub vegetation in between the existing golf course fairways. Is however future development stage, but remains a threat until permanently removed.</p>	

<p>Photo ID: 12</p> <p>Plot Number: 1</p> <p>Description/justification of classification: Class D Scrub</p> <p>Description/justification of classification: Tall acacia scrub vegetation in between the existing golf course fairways. Is however future development stage, but remains a threat until permanently removed.</p>	
<p>Photo ID: 13</p> <p>Plot Number: 1</p> <p>Description/justification of classification: Class D Scrub</p> <p>Description/justification of classification: Likely permanent area of retained scrub vegetation between future golf fairways (Staff 2m high).</p>	
<p>Photo ID: 14</p> <p>Plot Number: 1</p> <p>Description/justification of classification: Class D Scrub</p> <p>Description/justification of classification: Likely permanent area of retained scrub vegetation between future golf fairways (Staff 2m high).</p>	
<p>Photo ID: 15</p> <p>Plot Number: 1</p> <p>Description/justification of classification: Class D Scrub</p> <p>Description/justification of classification: Likely permanent area of retained acacia scrub vegetation between future golf fairways.</p>	
<p>Photo ID: 16</p> <p>Plot Number: 1</p> <p>Description/justification of classification: Class D Scrub</p> <p>Description/justification of classification: Likely permanent area of retained acacia scrub vegetation between future golf fairways.</p>	





<p>Photo ID: 17</p> <p>Plot Number: 1</p> <p>Description/justification of classification: Class D Scrub</p> <p>Description/justification of classification: Likely permanent area of retained acacia scrub vegetation near new Golf clubhouse (staff 2m high).</p>	<p>South East Elevation</p> <p>342°NW (T) 32°22.083' S, 115°44.146' E ±12 m ▲-2 m</p>  <p>14 Apr 2021, 12:19:09</p>
<p>Photo ID: 18</p> <p>Plot Number: 2</p> <p>Description/justification of classification: Class D Scrub</p> <p>Description/justification of classification: Acacia scrub vegetation 2-3m high in the Foreshore Reserve (Staff 5m high).</p>	<p>South West Elevation</p> <p>53°NE (T) 32°21.883' S, 115°44.099' E ±4 m ▲-10 m</p>  <p>14 Apr 2021, 12:14:27</p>
<p>Photo ID: 19</p> <p>Plot Number: 2</p> <p>Description/justification of classification: Class D Scrub</p> <p>Description/justification of classification: Acacia scrub vegetation 3-4m high in the Foreshore Reserve (Staff 5m high).</p>	<p>West Elevation</p> <p>89°E (T) 32°21.883' S, 115°44.098' E ±4 m ▲-10 m</p>  <p>14 Apr 2021, 12:08:37</p>
<p>Photo ID: 20</p> <p>Plot Number: 2</p> <p>Description/justification of classification: Class D Scrub</p> <p>Description/justification of classification: Acacia scrub vegetation 3-4m high in the Foreshore Reserve (Staff 2m high).</p>	
<p>Photo ID: 21</p> <p>Plot Number: 2</p> <p>Description/justification of classification: Class D Scrub</p> <p>Description/justification of classification: Acacia scrub vegetation 3-4m high in the Foreshore Reserve (Staff 2m high).</p>	<p>East Elevation</p> <p>262°W (T) 32°21.828' S, 115°44.129' E ±4 m ▲-11 m</p>  <p>14 Apr 2021, 12:22:30</p>

<p>Photo ID: 22</p> <p>Plot Number: 3</p> <p>Description/justification of classification: Class C Shrubland</p> <p>Description/justification of classification: Existing strip of shrubland vegetation will be retained between the new fairways.</p>	
<p>Photo ID: 23</p> <p>Plot Number: 3</p> <p>Description/justification of classification: Class C Shrubland</p> <p>Description/justification of classification: Existing strip of shrubland vegetation will be retained between the new fairways.</p>	
<p>Photo ID: 24</p> <p>Plot Number: 3</p> <p>Description/justification of classification: Class C Shrubland</p> <p>Description/justification of classification: Existing practice fairway, however revegetated to become low shrubland in new golf course redevelopment.</p>	
<p>Photo ID: 25</p> <p>Plot Number: 4</p> <p>Description/justification of classification: Class C Shrubland</p> <p>Description/justification of classification: Existing golf fairway, however revegetated to become low shrubland in new golf course redevelopment.</p>	
<p>Photo ID: 26</p> <p>Plot Number: 4</p> <p>Description/justification of classification: Class C Shrubland</p> <p>Description/justification of classification: Existing golf fairway, however revegetated to become low shrubland in new golf course redevelopment.</p>	

<p>Photo ID: 27</p> <p>Plot Number: 4</p> <p>Description/justification of classification: Class C Shrubland</p> <p>Description/justification of classification: Existing golf fairway, however revegetated to become low shrubland in new golf course redevelopment.</p>	
<p>Photo ID: 28</p> <p>Plot Number: 5</p> <p>Description/justification of classification: Exclusion Clause 2.2.3.2(f)</p> <p>Description/justification of classification: Area proposed for practice putting green. Irrigated and mown turf is the outcome.</p>	
<p>Photo ID: 29</p> <p>Plot Number: 5</p> <p>Description/justification of classification: Exclusion Clause 2.2.3.2(f)</p> <p>Description/justification of classification: Proposed Landscaped parkland in POS F, currently vegetated but proposed for irrigated and mown turf.</p>	
<p>Photo ID: 30</p> <p>Plot Number: 5</p> <p>Description/justification of classification: Exclusion Clause 2.2.3.2(f)</p> <p>Description/justification of classification: Proposed Landscaped parkland in POS F, currently vegetated.</p>	
<p>Photo ID: 31</p> <p>Plot Number: 5</p> <p>Description/justification of classification: Exclusion Clause 2.2.3.2(f)</p> <p>Description/justification of classification: Proposed Landscaped parkland in POS C, currently vegetated. The establishment and maintenance of all landscaped low threat POS areas will involve the following in perpetuity:</p> <ul style="list-style-type: none"> • Under pruning of shrubs, scrub and trees of all fine fuels (<6mm) 2 metres from ground level • Annually removing leaf litter, accumulated fine fuels and dead plants and/or plant material. 	

<ul style="list-style-type: none"> • Keeping garden beds irrigated and turf areas mown and grass green. • Pruning to keep clumps of trees and shrubs separated from one another. • Removal of weeds and regenerating Eucalypts, Acacia and other native plants not intended to be included as part of the landscape plans. 	
<p>Photo ID: 32</p> <p>Plot Number: 5</p> <p>Description/justification of classification: Exclusion Clause 2.2.3.2(f)</p> <p>Description/justification of classification: Proposed Landscaped parkland in POS C, currently vegetated. The establishment and maintenance of all landscaped low threat POS areas will involve the following in perpetuity:</p> <ul style="list-style-type: none"> • Under pruning of shrubs, scrub and trees of all fine fuels (<6mm) 2 metres from ground level • Annually removing leaf litter, accumulated fine fuels and dead plants and/or plant material. • Keeping garden beds irrigated and turf areas mown and grass green. • Pruning to keep clumps of trees and shrubs separated from one another. • Removal of weeds and regenerating Eucalypts, Acacia and other native plants not intended to be included as part of the landscape plans. 	
<p>Photo ID: 33</p> <p>Plot Number: 5</p> <p>Description/justification of classification: Exclusion Clause 2.2.3.2(f)</p> <p>Description/justification of classification: Proposed Landscaped parkland in POS C, currently vegetated. The establishment and maintenance of all landscaped low threat POS areas will involve the following in perpetuity:</p> <ul style="list-style-type: none"> • Under pruning of shrubs, scrub and trees of all fine fuels (<6mm) 2 metres from ground level • Annually removing leaf litter, accumulated fine fuels and dead plants and/or plant material. • Keeping garden beds irrigated and turf areas mown and grass green. • Pruning to keep clumps of trees and shrubs separated from one another. • Removal of weeds and regenerating Eucalypts, Acacia and other native plants not intended to be included as part of the landscape plans. 	

<p>Photo ID: 34</p> <p>Plot Number: 5</p> <p>Description/justification of classification: Exclusion Clause 2.2.3.2(f)</p> <p>Description/justification of classification: Existing low threat fairway vegetation. Will be maintained in similar condition (ie grass mown to less than 100mm).</p>	
<p>Photo ID: 35</p> <p>Plot Number: 5</p> <p>Description/justification of classification: Exclusion Clause 2.2.3.2(f)</p> <p>Description/justification of classification: New golf course interface area adjacent to residential development is proposed for intensive landscaping and management of trees and turf areas as outlined in Appendix 4. Will be maintained in similar condition (ie grass mown to less than 100mm).</p>	
<p>Photo ID: 36</p> <p>Plot Number: 5</p> <p>Description/justification of classification: Exclusion Clause 2.2.3.2(f)</p> <p>Description/justification of classification: New golf course interface area adjacent to residential development is proposed for intensive landscaping and management of trees and turf areas as outlined in Appendix 4. The establishment and maintenance of all landscaped low threat POS areas will involve the following in perpetuity:</p> <ul style="list-style-type: none"> • Under pruning of shrubs, scrub and trees of all fine fuels (<6mm) 2 metres from ground level • Annually removing leaf litter, accumulated fine fuels and dead plants and/or plant material. • Keeping garden beds irrigated and turf areas mown and grass green. • Pruning to keep clumps of trees and shrubs separated from one another. <p>Removal of weeds and regenerating Eucalypts, Acacia and other native plants not intended to be included as part of the landscape plans.</p>	

<p>Photo ID: 37</p> <p>Plot Number: 5</p> <p>Description/justification of classification: Exclusion Clause 2.2.3.2(f)</p> <p>Description/justification of classification: New golf course interface area adjacent to residential development is proposed for intensive landscaping and management of trees and turf areas as outlined in Appendix 4. The establishment and maintenance of all landscaped low threat POS areas will involve the following in perpetuity:</p> <ul style="list-style-type: none"> • Under pruning of shrubs, scrub and trees of all fine fuels (<6mm) 2 metres from ground level • Annually removing leaf litter, accumulated fine fuels and dead plants and/or plant material. • Keeping garden beds irrigated and turf areas mown and grass green. • Pruning to keep clumps of trees and shrubs separated from one another. <p>Removal of weeds and regenerating Eucalypts, Acacia and other native plants not intended to be included as part of the landscape plans.</p>	
<p>Photo ID: 38</p> <p>Plot Number: 5</p> <p>Description/justification of classification: Exclusion Clause 2.2.3.2(f)</p> <p>Description/justification of classification: Future golf course fairway, irrigated and mown turf.</p>	
<p>Photo ID: 39</p> <p>Plot Number: 5</p> <p>Description/justification of classification: Exclusion Clause 2.2.3.2(f)</p> <p>Description/justification of classification: Future golf course fairway, irrigated and mown turf.</p>	
<p>Photo ID: 40</p> <p>Plot Number: 5</p> <p>Description/justification of classification: Exclusion Clause 2.2.3.2(f)</p> <p>Description/justification of classification: New golf course interface area adjacent to residential development is proposed for intensive landscaping and management of trees and turf areas as outlined in Appendix 4. The</p>	

establishment and maintenance of all landscaped low threat POS areas will involve the following in perpetuity:

- Under pruning of shrubs, scrub and trees of all fine fuels (<6mm) 2 metres from ground level
- Annually removing leaf litter, accumulated fine fuels and dead plants and/or plant material.
- Keeping garden beds irrigated and turf areas mown and grass green.
- Pruning to keep clumps of trees and shrubs separated from one another.

Removal of weeds and regenerating Eucalypts, Acacia and other native plants not intended to be included as part of the landscape plans.

Photo ID: 41

Plot Number: 5

Description/justification of classification: Exclusion Clause 2.2.3.2(f)

Description/justification of classification: New golf course interface area adjacent to residential development is proposed for intensive landscaping and management of trees and turf areas as outlined in Appendix 4. The establishment and maintenance of all landscaped low threat POS areas will involve the following in perpetuity:

- Under pruning of shrubs, scrub and trees of all fine fuels (<6mm) 2 metres from ground level
- Annually removing leaf litter, accumulated fine fuels and dead plants and/or plant material.
- Keeping garden beds irrigated and turf areas mown and grass green.
- Pruning to keep clumps of trees and shrubs separated from one another.

Removal of weeds and regenerating Eucalypts, Acacia and other native plants not intended to be included as part of the landscape plans.



Photo ID: 42



Plot Number: 5






Description/justification of classification: Exclusion Clause 2.2.3.2(f)

Description/justification of classification: New golf course interface area adjacent to residential development is proposed for intensive landscaping and management of trees and turf areas as outlined in Appendix 4. Staff is 2m high. The establishment and maintenance of all landscaped low threat POS areas will involve the following in perpetuity:

- Under pruning of shrubs, scrub and trees of all fine fuels (<6mm) 2 metres from ground level
- Annually removing leaf litter, accumulated fine fuels and dead plants and/or plant material.



<ul style="list-style-type: none"> • Keeping garden beds irrigated and turf areas mown and grass green. • Pruning to keep clumps of trees and shrubs separated from one another. • Removal of weeds and regenerating Eucalypts, Acacia and other native plants not intended to be included as part of the landscape plans. 	
<p>Photo ID: 43</p> <p>Plot Number: 5</p> <p>Description/justification of classification: Exclusion Clause 2.2.3.2(f)</p> <p>Description/justification of classification: Kennedy Bay Drive mowed road reserve</p>	
<p>Photo ID: 44</p> <p>Plot Number: 5</p> <p>Description/justification of classification: Exclusion Clause 2.2.3.2(f)</p> <p>Description/justification of classification: Existing managed parkland area with irrigated turf and isolated trees</p>	
<p>Photo ID: 45</p> <p>Plot Number: 5</p> <p>Description/justification of classification: Exclusion Clause 2.2.3.2(f)</p> <p>Description/justification of classification: Existing managed parkland area with irrigated turf</p>	
<p>Photo ID: 46</p> <p>Plot Number: 8</p> <p>Description/justification of classification: Exclusion Clause 2.2.3.2(f)</p> <p>Description/justification of classification: Vegetated area within site but proposed for development within the site. Staff is 5m high. Vegetation to be cleared, and permanently managed to less than 100mm high.</p>	

<p>Photo ID: 47</p> <p>Plot Number: 8</p> <p>Description/justification of classification: Exclusion Clause 2.2.3.2(e)</p> <p>Description/justification of classification: Vegetated area within site but proposed for total clearing to accommodate Stage 1 development.</p>	
<p>Photo ID: 48</p> <p>Plot Number: 8</p> <p>Description/justification of classification: Exclusion Clause 2.2.3.2(e)</p> <p>Description/justification of classification: Vegetated area within site but proposed for total clearing to accommodate Stage 1 development.</p>	
<p>Photo ID: 49</p> <p>Plot Number: 8</p> <p>Description/justification of classification: Exclusion Clause 2.2.3.2(e)</p> <p>Description/justification of classification: Vegetated area within site but proposed for total clearing to accommodate Stage 1 development.</p>	
<p>Photo ID: 50</p> <p>Plot Number: 8</p> <p>Description/justification of classification: Exclusion Clause 2.2.3.2(e)</p> <p>Description/justification of classification: Vegetated area within site but proposed for total clearing to accommodate Stage 1 development.</p>	
<p>Photo ID: 51</p> <p>Plot Number: 8</p> <p>Description/justification of classification: Exclusion Clause 2.2.3.2(e)</p> <p>Description/justification of classification: Vegetated area within site but proposed for total clearing to accommodate Stage 1 development.</p>	

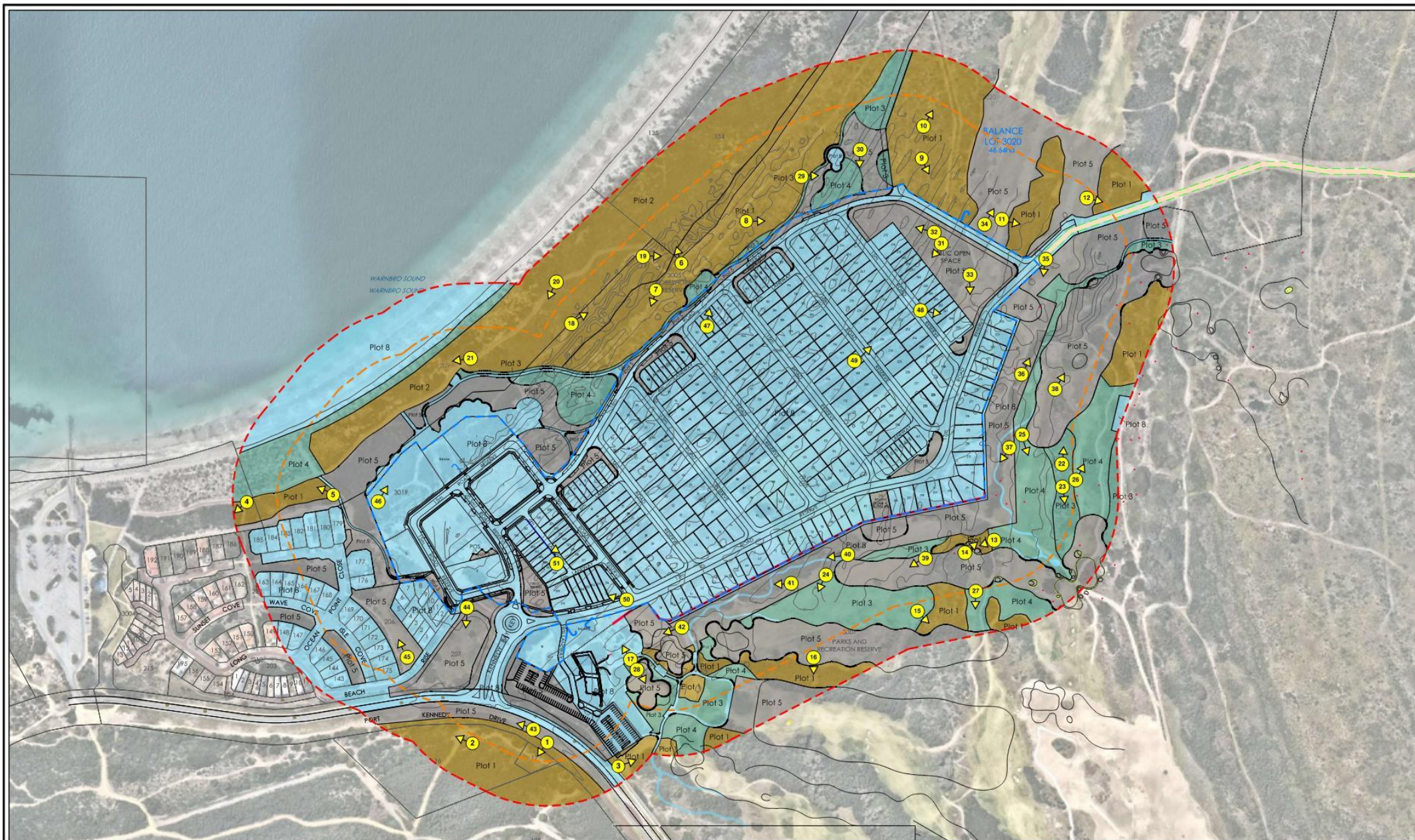
3.1.2 Effective Slope

The landscape on and surrounding the site in undeveloped areas is dominated by coastal sand dunes which result in many changes in slope, but only over short distances.

The topography and effective slopes are outlined in Table 2.

Table 2. Summary of vegetation type and effective slope

Vegetation Area/ Plot	Applied Vegetation Classification	Effective Slope under the Classified Vegetation (degrees)
1	Class D Scrub	Flat/Upslope
2	Class D Scrub	Downslope 0-5
3	Class C Shrubland	Flat/Upslope
4	Class D Shrubland	Downslope 0-5
5	Exclusion Clause 2.2.3.2 (f)	N/A
6	Exclusion Clause 2.2.3.2 (b)	N/A
7	Exclusion Clause 2.2.3.2 (c)	N/A
8	Exclusion Clause 2.2.3.2 (e)	N/A



Location details: Lot 3020 Port Kennedy Drive
Port Kennedy - Stage 1
Assessment date: April, 2021
Prepared by: Bushfire Safety Consulting
Accreditation level: Level 3 BPAD Practitioner
Accreditation number: BPAD 23160
Accreditation expiry date: 31st January, 2023
Date aerial photo: October 2021

**FIGURE 4- VEGETATION
CLASSIFICATION MAP
(BAL CONTOUR MAP)**

0 50 100 150m
SCALE 1:4000 @ A3
DATE: MAY 2022



LEGEND

- SUBJECT SITE
- ASSESSMENT AREA (150m) FROM THE EXTERNAL BOUNDARY OF THE SUBJECT SITE
- ASSESSMENT AREA (100m) FROM THE EXTERNAL BOUNDARY OF THE SUBJECT SITE

SOURCE OF PHOTOGRAPHY: NEARMAP

- PLOT 1 - CLASS D SCRUB - FLAT / UPSLOPE
- PLOT 2 - CLASS D SCRUB - DOWNSLOPE 0-5
- PLOT 3 - CLASS C SHRUBLAND - FLAT / UPSLOPE
- PLOT 4 - CLASS C SHRUBLAND - DOWNSLOPE 0-5
- PLOT 5 - EXCLUSION CLAUSE 2.2.3.2(i)
- PLOT 6 - EXCLUSION CLAUSE 2.2.3.2(b)
- PLOT 7 - EXCLUSION CLAUSE 2.2.3.2(c)
- PLOT 8 - EXCLUSION CLAUSE 2.2.3.2(e)



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3.2 Assessment Outputs

A BAL contour assessment was undertaken according to Appendix 3 of the Guidelines and the results are found in Table 3 and **Figure 5**.

A Method 1 BAL Assessment was undertaken to determine the BAL contours impacting the site. No lots are exposed to BAL-29 or above.

Table 3. Summary of assessment outputs

Lot / s	Plot No. & Applied Vegetation Classification	Effective Slope	Separation distance to Classified Vegetation	Highest BAL Contour
3019	1 – Class D Scrub	Flat / upslope	30.5	BAL-12.5
1	2 – Class D Scrub	Downslope 0-5	42 metres	BAL-12.5
2	4 – Class C Shrubland	Downslope 0-5	68 metres	BAL-12.5
4	1 – Class D Scrub	Flat / upslope	97 metres	BAL-12.5
5	1 – Class D Scrub	Flat / upslope	68.5 metres	BAL-12.5
6	1 – Class D Scrub	Flat / upslope	141 metres	BAL-LOW
10	1 – Class D Scrub	Flat / upslope	70.5 metres	BAL-12.5
11	4 – Class C Shrubland	Flat / upslope	68.5 metres	BAL-12.5
12	4 – Class C Shrubland	Downslope 0-5	63.5 metres	BAL-12.5
13	4 – Class C Shrubland	Downslope 0-5	59 metres	BAL-12.5
14	4 – Class C Shrubland	Downslope 0-5	54.5 metres	BAL-12.5
15	4 – Class C Shrubland	Downslope 0-5	50 metres	BAL-12.5
16	4 – Class C Shrubland	Downslope 0-5	46.5 metres	BAL-12.5
17	4 – Class C Shrubland	Downslope 0-5	43 metres	BAL-12.5
37	4 – Class C Shrubland	Downslope 0-5	76.5 metres	BAL-12.5
36	4 – Class C Shrubland	Downslope 0-5	88.5 metres	BAL-12.5
35	4 – Class C Shrubland	Downslope 0-5	96 metres	BAL-12.5
30-34	1 – Class D Scrub	Flat / upslope	>100 metres	BAL-LOW
26-29	1 – Class D Scrub	Flat / upslope	82 metres	BAL-12.5
25	1 – Class D Scrub	Flat / upslope	86.5 metres	BAL-12.5
24	1 – Class D Scrub	Flat / upslope	98 metres	BAL-12.5
20-23	1 – Class D Scrub	Flat / upslope	>100 metres	BAL-LOW
19	4 – Class C Shrubland	Downslope 0-5	96 metres	BAL-12.5
18	4 – Class C Shrubland	Downslope 0-5	83.5 metres	BAL-12.5

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59-62	4 – Class C Shrubland	Downslope 0-5	15 metres	BAL-19
63	4 – Class C Shrubland	Downslope 0-5	39 metres	BAL-12.5
64	4 – Class C Shrubland	Downslope 0-5	56 metres	BAL-12.5
65	4 – Class C Shrubland	Downslope 0-5	67 metres	BAL-12.5
66	4 – Class C Shrubland	Downslope 0-5	78.5 metres	BAL-12.5
67	4 – Class C Shrubland	Downslope 0-5	91 metres	BAL-12.5
68-72	3 – Class C Shrubland	Flat / upslope	>100 metres	BAL-LOW
73-74	3 – Class C Shrubland	Flat / upslope	80 metres	BAL-12.5
48-49	3 – Class C Shrubland	Flat / upslope	80 metres	BAL-12.5
51-53	3 – Class C Shrubland	Flat / upslope	>100 metres	BAL-LOW
54	4 – Class C Shrubland	Downslope 0-5	98 metres	BAL-12.5
55	4 – Class C Shrubland	Downslope 0-5	83 metres	BAL-12.5
56	4 – Class C Shrubland	Downslope 0-5	71 metres	BAL-12.5
57	4 – Class C Shrubland	Downslope 0-5	58.5 metres	BAL-12.5
58	4 – Class C Shrubland	Downslope 0-5	43 metres	BAL-12.5
98	1 – Class D Scrub	Flat / upslope	20.5 metres	BAL-19
99-101	1 – Class D Scrub	Flat / upslope	21 metres	BAL-19
102-103	1 – Class D Scrub	Flat / upslope	22 metres	BAL-19
104-105	1 – Class D Scrub	Flat / upslope	22 metres	BAL-19
97-107	1 – Class D Scrub	Flat / upslope	54 metres	BAL-12.5
96-108	1 – Class D Scrub	Flat / upslope	66 metres	BAL-12.5
95-109	1 – Class D Scrub	Flat / upslope	79 metres	BAL-12.5
94-110	1 – Class D Scrub	Flat / upslope	91 metres	BAL-12.5
111-118	1 – Class D Scrub	Flat / upslope	>100 metres	BAL-LOW
84,85,119,120	3 – Class C Shrubland	Flat / upslope	82 metres	BAL-12.5
86-92	3 – Class C Shrubland	Flat / upslope	>100 metres	BAL-LOW
93	4 – Class C Shrubland	Downslope 0-5	93.5 metres	BAL-12.5
137-142	1 – Class D Scrub	Flat / upslope	20.5 metres	BAL-19
136 & 143	1 – Class D Scrub	Flat / upslope	46 metres	BAL-12.5
135 & 144	1 – Class D Scrub	Flat / upslope	60.5 metres	BAL-12.5
134 & 145	1 – Class D Scrub	Flat / upslope	76 metres	BAL-12.5
133 & 146	1 – Class D Scrub	Flat / upslope	89 metres	BAL-12.5
132 & 146	3 – Class C Shrubland	Flat / upslope	97 metres	BAL-12.5
148 - 156	1 – Class D Scrub	Flat / upslope	>100 metres	BAL-LOW

Bushfire Management Plan – Kennedy Bay Subdivision Stage 1 – V5.0

121,122,158, 158	3 – Class C Shrubland	Flat / upslope	80 metres	BAL-12.5
123-131	1 – Class D Scrub	Flat / upslope	>100 metres	BAL-LOW
183	3 – Class C Shrubland	Flat / upslope	18 metres	BAL-19
184	3 – Class C Shrubland	Flat / upslope	17.5 metres	BAL-19
185-189	3 – Class C Shrubland	Flat / upslope	15.5 metres	BAL-19
190 & 182	3 – Class C Shrubland	Flat / upslope	50 metres	BAL-12.5
191 & 181	3 – Class C Shrubland	Flat / upslope	61 metres	BAL-12.5
192 & 180	3 – Class C Shrubland	Flat / upslope	73metres	BAL-12.5
193 & 179	3 – Class C Shrubland	Flat / upslope	89 metres	BAL-12.5
194 - 204	3 – Class C Shrubland	Flat / upslope	>100 metres	BAL-LOW
167	4 – Class C Shrubland	Downslope 0-5	97 metres	BAL-12.5
166	3 – Class C Shrubland	Flat / upslope	98.5 metres	BAL-12.5
165	3 – Class C Shrubland	Flat / upslope	95.5 metres	BAL-12.5
164	3 – Class C Shrubland	Flat / upslope	93 metres	BAL-12.5
163	3 – Class C Shrubland	Flat / upslope	90 metres	BAL-12.5
162	3 – Class C Shrubland	Flat / upslope	87 metres	BAL-12.5
161	3 – Class C Shrubland	Flat / upslope	84 metres	BAL-12.5
160	3 – Class C Shrubland	Flat / upslope	81 metres	BAL-12.5
168 - 178	3 – Class C Shrubland	Flat / upslope	>100 metres	BAL-LOW
240	3 – Class C Shrubland	Flat / upslope	19 metres	BAL-12.5
241	4 – Class C Shrubland	Downslope 0-5	16.8 metres	BAL-19
242 - 243	4 – Class C Shrubland	Downslope 0-5	15 metres	BAL-19
244	4 – Class C Shrubland	Downslope 0-5	38 metres	BAL-12.5
245	4 – Class C Shrubland	Downslope 0-5	50 metres	BAL-12.5
246	4 – Class C Shrubland	Downslope 0-5	63 metres	BAL-12.5
247	4 – Class C Shrubland	Downslope 0-5	78 metres	BAL-12.5
248	4 – Class C Shrubland	Downslope 0-5	88 metres	BAL-12.5
249 - 256	1 – Class D Scrub	Flat / upslope	>100 metres	BAL-LOW
257, 258, 226	4 – Class C Shrubland	Downslope 0-5	80 metres	BAL-12.5
225	4 – Class C Shrubland	Downslope 0-5	84 metres	BAL-12.5
227 - 234	4 – Class C Shrubland	Downslope 0-5	>100 metres	BAL-LOW
235	4 – Class C Shrubland	Downslope 0-5	97.5 metres	BAL-12.5
236	4 – Class C Shrubland	Downslope 0-5	84 metres	BAL-12.5
237	4 – Class C Shrubland	Downslope 0-5	70 metres	BAL-12.5
238	4 – Class C Shrubland	Downslope 0-5	52.5 metres	BAL-12.5

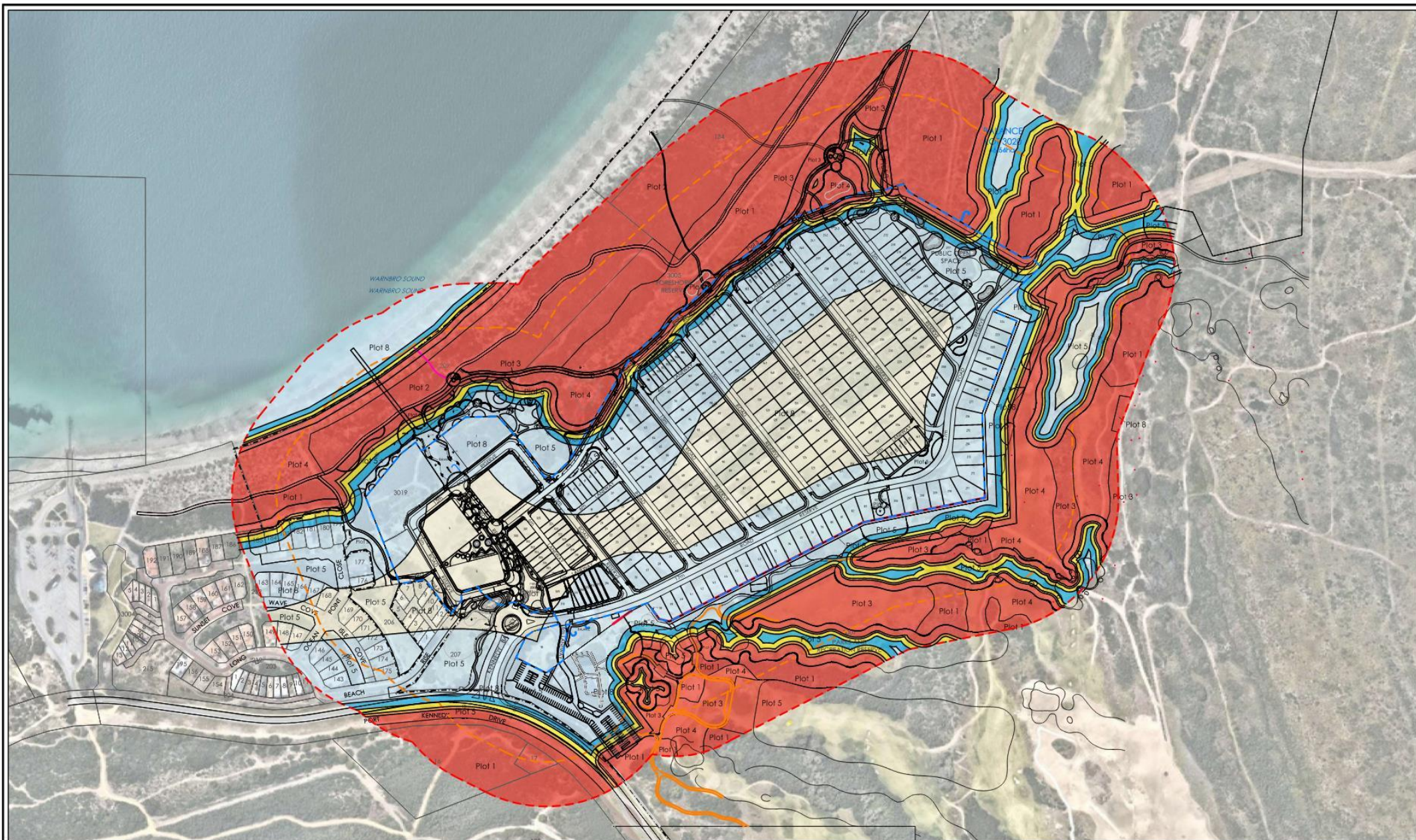
239	4 – Class C Shrubland	Downslope 0-5	41.5 metres	BAL-12.5
272	1 – Class D Scrub	Flat / upslope	39 metres	BAL-12.5
271	1 – Class D Scrub	Flat / upslope	44 metres	BAL-12.5
270	3 – Class C Shrubland	Flat / upslope	49.5 metres	BAL-LOW
269	1 – Class D Scrub	Flat / upslope	52 metres	BAL-12.5
268	1 – Class D Scrub	Flat / upslope	55.5 metres	BAL-12.5
267	1 – Class D Scrub	Flat / upslope	58 metres	BAL-12.5
266	1 – Class D Scrub	Flat / upslope	62 metres	BAL-12.5
265	1 – Class D Scrub	Flat / upslope	66 metres	BAL-12.5
264	1 – Class D Scrub	Flat / upslope	71 metres	BAL-12.5
263	1 – Class D Scrub	Flat / upslope	74 metres	BAL-12.5
262	1 – Class D Scrub	Flat / upslope	80 metres	BAL-12.5
261	1 – Class D Scrub	Flat / upslope	83.5 metres	BAL-12.5
260	1 – Class D Scrub	Flat / upslope	87 metres	BAL-12.5
259	4 – Class C Shrubland	Downslope 0-5	91 metres	BAL-12.5
224-212	4 – Class C Shrubland	Downslope 0-5	34.5 metres	BAL-12.5
211-209	1 – Class D Scrub	Flat / upslope	34.5 metres	BAL-12.5
208-206 & 41-47 & 75-83	4 – Class C Shrubland	Downslope 0-5	34.5 metres	BAL-12.5
38-40	1 – Class D Scrub	Flat / upslope	34.5 metres	BAL-12.5
301-309	4 – Class C Shrubland	Downslope 0-5	>100 metres	BAL-LOW
310	1 – Class D Scrub	Flat / upslope	90 metres	BAL-12.5
311	1 – Class D Scrub	Flat / upslope	80.5 metres	BAL-12.5
312	1 – Class D Scrub	Flat / upslope	77 metres	BAL-12.5
313	1 – Class D Scrub	Flat / upslope	73 metres	BAL-12.5
314	1 – Class D Scrub	Flat / upslope	71 metres	BAL-12.5
315	1 – Class D Scrub	Flat / upslope	68 metres	BAL-12.5
316	1 – Class D Scrub	Flat / upslope	67 metres	BAL-12.5
317-325	1 – Class D Scrub	Flat / upslope	>100 metres	BAL-LOW
326	4 – Class C Shrubland	Downslope 0-5	90 metres	BAL-12.5

The final developed scenario BAL contours where the POS is landscaped parkland and managed to low threat standard is outlined in **Figure 5**.

4 IDENTIFICATION OF BUSHFIRE HAZARD ISSUES

The Class C Shrubland and Class D Scrub vegetation to the north and west of the site in the Foreshore Reserve poses the greatest long-term threat to the development due to its proximity to the residential lots. East of the site between the proposed golf course fairways revegetation of Class C shrubland is proposed that will provide corridors of fuel that could impact the site in easterly winds.

Predicted radiant heat flux levels and ember attack could impact the site as evident in the BAL Contour Plan (**Figure 5**).



Location details: Lot 3020 Port Kennedy Drive
Port Kennedy - Stage 1
Assessment date: April, 2021
Prepared by: Bushfire Safety Consulting
Accreditation level: Level 3 BPAD Practitioner
Accreditation number: BPAD 23160
Accreditation expiry date: 31st January, 2023
Date aerial photo: October 2021

FIGURE 5
BAL CONTOUR MAP

0 50 100 150m
SCALE 1:4000 @ A3
DATE: MAY 2022



LEGEND

SUBJECT SITE
ASSESSMENT AREA (150m) FROM THE
EXTERNAL BOUNDARY OF THE SUBJECT SITE
ASSESSMENT AREA (100m) FROM THE
EXTERNAL BOUNDARY OF THE SUBJECT SITE

SOURCE OF PHOTOGRAPHY: NEARMAP

INDICATIVE BUSHFIRE ATTACK LEVELS

BAL LOW
BAL 12.5
BAL 19
BAL 29
BAL 40
BAL FLAME ZONE



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5 ASSESSMENT AGAINST THE BUSHFIRE PROTECTION CRITERIA

This report adopts an acceptable solution based system of control for each bushfire protection criteria. This methodology is consistent with Appendix 4 of the *Guidelines for Planning in Bushfire Prone Areas, Version 1.4 (2021)*. The management issues are:

- Location of the Development.
- Siting and Design of Development.
- Vehicular Access.
- Water.

Acceptable solutions are proposed for all of the Bushfire Protection Criteria and each illustrates a means of satisfactorily meeting the corresponding performance criteria.

5.1 Compliance Table

Acceptable solutions are proposed for all of the bushfire protection criteria and each illustrates a means of satisfactorily meeting the corresponding performance criteria. Land use planning bushfire risk mitigation strategies are comprehensively detailed in the following sections by providing responses to the performance criteria that fulfil the intent of the bushfire hazard management issues outlined in the *Guidelines for Planning in Bushfire Prone Areas V1.4 (2021)*. The compliance checklist is provided in Table 4 and spatial representation of the bushfire management strategies are illustrated in Figure 6.

Bushfire Management Plan – Kennedy Bay Subdivision Stage 1 – V5.0

Table 4		
Table 4 Bushfire Protection Criteria	Method of compliance	Proposed bushfire management strategies
	Acceptable Solutions	
Element 1: Location	A1.1 Development Location	The Method 1 BAL Assessment in this report demonstrates the classified vegetation in Plots 1-4 surrounding the site impacts the perimeter on three sides. A number of perimeter lots are exposed to BAL-19. BAL-19 is not exceeded.
Element 2: Siting and Design	A2.1 Asset Protection Zone (APZ)	The Asset Protection Zones (APZ) is incorporated into the perimeter road on the northern and eastern boundary. Where a perimeter road is not provided, lots are adjacent to landscaped parklands. All lots achieve less than BAL-19 exposure. The APZ is managed in accordance with the requirements of Schedule 1 Standards for Asset Protection Zones outlined in Appendix 2.
Element 3: Vehicular Access	A3.1 Public roads	All proposed public roads within and surrounding the site comply with minimum public road standards outlined in Appendix 2.
	A3.2a Multiple access way	The existing boat ramp area and adjacent residential development is accessed by Port Kennedy Drive. This subdivision proposal creates a second access way between the site and Knutsford Crescent which is north west of the subdivision. The public road will be extended to the edge of the future subdivision stage and a temporary 600 metre long Emergency Access Way will connect across to the public road network. This is the shortest route between the site and the public road network that achieves two access ways to two different destinations. Ultimately the public road network will be extended through to Bayeux Avenue in future subdivision stages.
	A3.2b Emergency access way	The proposed Emergency Access Way is maximum 600 metres in length, is temporary and will comply with minimum standards outlined in Appendix 2.
	A3.3 Through roads	There are no cul-de-sacs or dead ends proposed. All roads are through roads and a temporary EAW provides through access.
	A3.4a Perimeter roads	Perimeter roads occur around the entire site where the interface is directly adjacent to bushland and bushfire hazard. In areas without a perimeter road, the interface is landscaped parkland and not a bushfire threat.
	A3.4b Fire services access route	There are no Fire Service Access Routes proposed.
	A3.5 Battle-axe access legs	There are no battle axe access ways proposed or required.
	A3.6 Private driveways	Not applicable
Element 4: Water	A4.1 Identification of future water supply	Reticulated water will be provided to the entire development. Fire hydrants will be spaced according to Water Corporation and DFES standards and provide emergency services with access to an adequate water supply.
	A4.2 Provision of water for firefighting purposes	Not applicable
	A4.3 Individual lots within non-reticulated areas	Not applicable
Element 5: Vulnerable Tourism Land Uses	A5.1a Siting and Design	Not applicable
	A5.2a Vehicular access	Not applicable
	A5.2b Signage	Not applicable
	A5.3 Provision of water	Not applicable

5.2 Additional Management Strategies

The development of the landscaped areas within the site and surrounding it to well managed and maintained parks is an important strategy at the site. During development stages, it will be important to also manage vegetation in a low fuel condition within the site and maintain low fuel loads to ensure temporary fuels do not encourage increasing fire behaviour in the interim development period.

APZ standards within the site will be established and maintained by the developer prior to the creation of titles until the sale of lots. Public roads and fire hydrants will be spaced to acceptable standards.

A summary of management strategies is outlined in **Figure 6**.

There are no specific Vulnerable or High-Risk Land Uses proposed at the site. Any specific applications will trigger the necessary requirements under State Planning Policy 3.7.

REQUIREMENTS

1. Permanent vegetation is sited in the foreshore reserve.
2. Class C Shrubland vegetation will be re-established between the golf links fairways and small pockets of Class D Scrub will be retained.
3. The perimeter roads and landscape interface has been specifically designed to ensure they are established and maintained as Low Threat as per Exclusion Clause 2.2.3.2(f) in AS3959:2018. The golf course interface has a minimum 35 metre highly landscaped and managed area.
4. The maximum BAL rating on any lot is BAL-19.
5. An Emergency Access Way links the subdivision with the public road network and provides a temporary second access way. the EAW can be gated, but not locked during the fire season, but may be locked during non fire period to reduce illegal activities such as rubbish dumping. Two access ways are achieved.
6. The Development is in a reticulated area and fire hydrants are spaced to minimum standards.

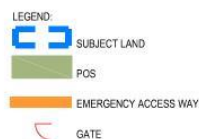
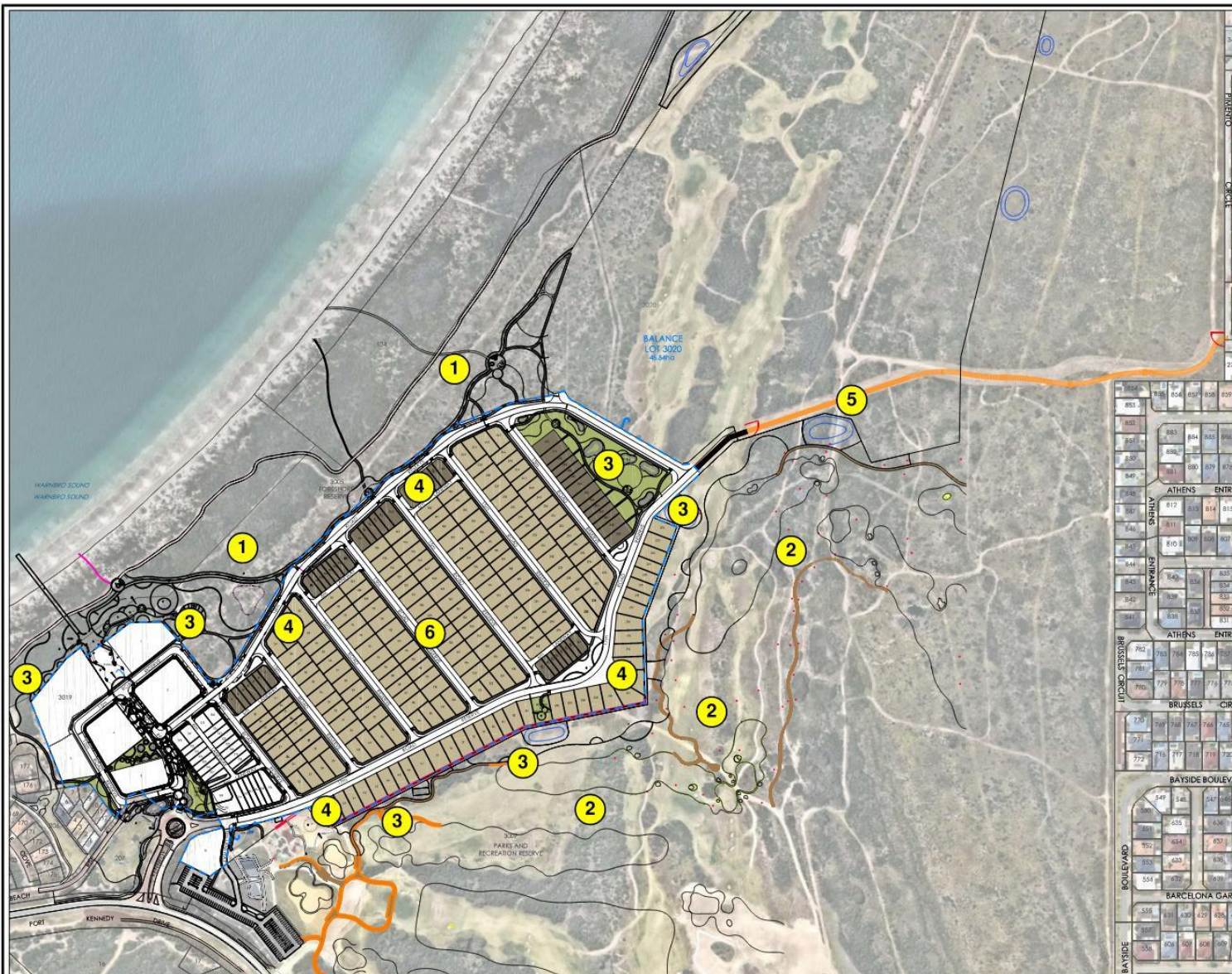


FIGURE 6 - SPATIAL REPRESENTATION OF BUSHFIRE MANAGEMENT STRATEGIES



Location details:	Lot 3020 Port Kennedy Drive Port Kennedy - Stage 1
Assessment date:	April, 2021
Prepared by:	Bushfire Safety Consulting
Accreditation level:	Level 3 BPAD Practitioner
Accreditation number:	BPAD 23160
Accreditation expiry date:	31st January, 2023
Date aerial photo:	October 2021

6 RESPONSIBILITIES FOR IMPLEMENTATION AND MANAGEMENT OF THE BUSHFIRE MEASURES

Table 5 outlines the initial and ongoing responsibilities, actions and associated works that need to be undertaken by the developer, future landowners and the City of Rockingham. The check boxes for implementation actions will be used for subdivision clearance. A Bushfire Planning Practitioner will certify the BAL ratings are correct and necessary implementation actions have been completed.

Table 5. Responsibility for bushfire measures

Table 3: Responsibility for bushfire measures

DEVELOPER – PRIOR TO ISSUE OF TITLES		
No.	Implementation Action	Subdivision Clearance
1	Establish the public roads and Emergency Access Way to standards outlined in Appendix 2.	<input type="checkbox"/>
2	Establish the reticulated water supply and hydrant spacing in accordance with the Water Corporation’s No.63 Water Reticulation Standard.	<input type="checkbox"/>
3	Establish and maintain low threat vegetation in POS areas and the 35 metre Golf Course interface that complies with Exclusion Clause 2.2.3.2 in AS3959. Re-assess and certify BAL ratings at subdivision clearance stage.	<input type="checkbox"/>
4	Clear Lot 3019 and maintain it to APZ standards (Appendix 1). Annual slashing of all vegetation to maintain no growth above 100mm in height prior to each fire season is one option	<input type="checkbox"/>
5	A notification, pursuant to Section 70A of the Transfer of Land Act 1893 is to be placed on the certificate(s) of title of the lots within the Bushfire Prone Area. Notice of this notification is to be included on the diagram or plan of survey (deposited plan). The notification is to state as follows: 'The lot(s) is/are subject to a Bushfire Management Plan. (Local Government)'.	
DEVELOPER – AT SALE OF LOTS		
6	Make a copy of this BMP available to each lot along with the <i>Homeowners Bush Fire Survival Manual, Prepare, Act, Survive</i> (or similar suitable documentation) and the City of Rockingham’s Fire Control Notice.	
7	Maintain future development stages in a low threat condition so as not to pose a threat to the development	

LANDOWNER/OCCUPIER – ONGOING MANAGEMENT	
8	Maintain the Asset Protection Zone (APZ) to standards stated in this BMP (Appendix 1).
9	The landowner of the golf course must ensure that the golf course is maintained as per the Bushfire Considerations outlined in the “Kennedy Bay Stage 1 – Golf Course Interface Plan
10	Ensure the site complies with the City of Rockingham’s Fire Control Notice as published.
11	Ensure construction of buildings comply with AS 3959:2018
12	If buildings are subject to additional construction in the future, AS 3959:2018 compliance is required.
CITY OF ROCKINGHAM – ONGOING MANAGEMENT	
13	Maintain public roads to appropriate standards and ensure compliance with the City of Rockingham’s Fire Control Notice.
14	Provide fire prevention and preparedness advice to landowners upon request, and the City of Rockingham’s Fire Control Notice.

Certification by Bushfire Consultant

I _____ certify that at the time of inspection, the BAL ratings contained within this BMP are correct, and implementation of Actions 1-4 has been undertaken in accordance with the BMP.

Clearance is recommended.

Signature: _____

Date: _____

7 CONCLUSION

This Plan provides acceptable solutions that fulfil the intent of the bushfire hazard management issues outlined in the Guidelines for Planning in Bushfire Prone Areas (WAPC 2021 V1.4).

However, community bushfire safety is a shared responsibility between governments, fire agencies, communities and individuals.

The subdivision is located in the bushfire prone area (i.e. within 100 m of classified vegetation) and risk is reduced via compliance with AS 3959:2018 standards. No lots are exposed to BAL-29 or greater.

A minimum of two access options including a temporary Emergency access Way is provided and dedicated fire hydrant spacings for fire-fighting are provided. The proposed development will fall within the acceptable level of risk.

REFERENCES

Department of Fire and Emergency Services (DFES), 2014, *The Home Owner's Bushfire Survival Manual*, https://www.dfes.wa.gov.au/safetyinformation/fire/bushfire/BushfireManualsandGuides/DFES_Bushfire-Homeowners_Survival_Manual.pdf, Department of Fire and Emergency Services, Government of Western Australia.

Standards Australia, 2018, *Construction of buildings in bushfire-prone areas (Amendments 1-3)*, AS 3959-2018, Standards Australia International Ltd, Sydney.

Western Australian Planning Commission (WAPC), 2015, *State Planning Policy No. 3.7: Planning in Bushfire Prone Areas (SPP3.7)*, December 2015, Western Australian Planning Commission and Department of Planning WA, Government of Western Australia.

Western Australian Planning Commission (WAPC), 2021, *Guidelines for Planning in Bushfire Prone Areas*, December 2017 V1.4, Western Australian Planning Commission and Department of Planning WA, Government of Western Australia.



APPENDICES

Appendix 1: Asset Protection Zone Standards

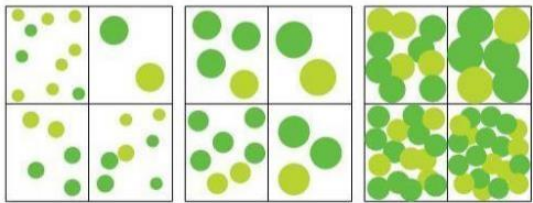
Appendix 2: Vehicular Access Technical Requirements

Appendix 3: City of Rockingham Fire Control Notice

Appendix 4: Kennedy Bay Stage 1 – Golf Course Interface Landscape Concept

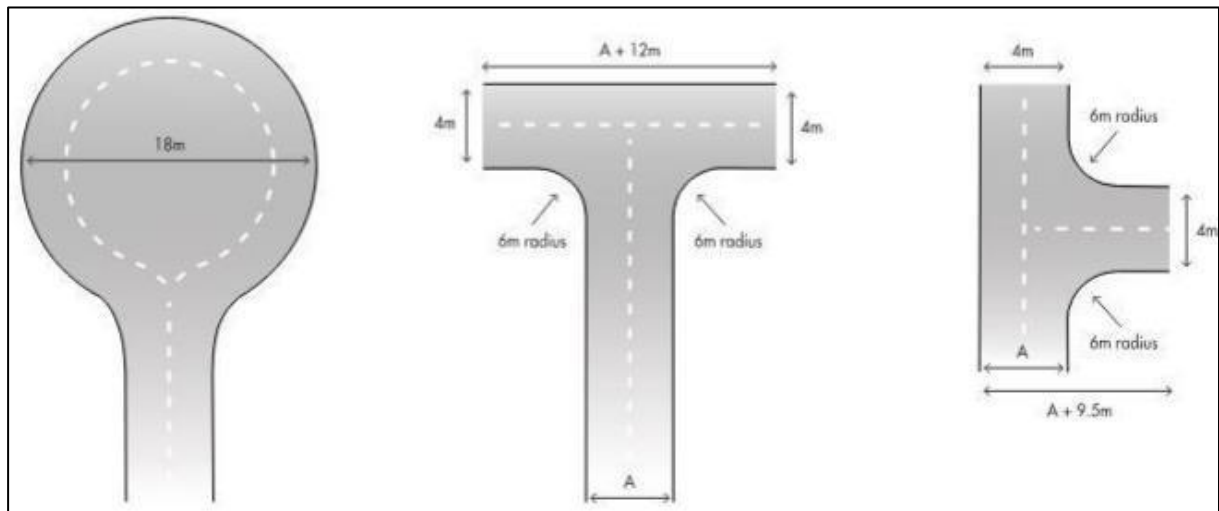
Appendix 5: Landscape Masterplan and POS Management

Appendix 1 – Asset Protection Standards

SCHEDULE 1: STANDARDS FOR ASSET PROTECTION ZONES	
OBJECT	REQUIREMENT
Fences within the APZ	<ul style="list-style-type: none"> Should be constructed from non-combustible materials (for example, iron, brick, limestone, metal post and wire, or bushfire-resisting timber referenced in Appendix F of AS 3959).
Fine fuel load (Combustible, dead vegetation matter <6 millimetres in thickness)	<ul style="list-style-type: none"> Should be managed and removed on a regular basis to maintain a low threat state. Should be maintained at <2 tonnes per hectare (on average). Mulches should be non-combustible such as stone, gravel or crushed mineral earth or wood mulch >6 millimetres in thickness.
Trees* (>6 metres in height)	<ul style="list-style-type: none"> Trunks at maturity should be a minimum distance of six metres from all elevations of the building. Branches at maturity should not touch or overhang a building or powerline. Lower branches and loose bark should be removed to a height of two metres above the ground and/or surface vegetation. Canopy cover within the APZ should be <15 per cent of the total APZ area. Tree canopies at maturity should be at least five metres apart to avoid forming a continuous canopy. Stands of existing mature trees with interlocking canopies may be treated as an individual canopy provided that the total canopy cover within the APZ will not exceed 15 per cent and are not connected to the tree canopy outside the APZ. <p>Figure 19: Tree canopy cover – ranging from 15 to 70 per cent at maturity</p>  <p>15% 30% 70%</p>
Shrub* and scrub* (0.5 metres to six metres in height). Shrub and scrub >6 metres in height are to be treated as trees.	<ul style="list-style-type: none"> Should not be located under trees or within three metres of buildings. Should not be planted in clumps >5 square metres in area. Clumps should be separated from each other and any exposed window or door by at least 10 metres.
Ground covers* (<0.5 metres in height. Ground covers >0.5 metres in height are to be treated as shrubs)	<ul style="list-style-type: none"> Can be planted under trees but must be maintained to remove dead plant material, as prescribed in 'Fine fuel load' above. Can be located within two metres of a structure, but three metres from windows or doors if >100 millimetres in height.
Grass	<ul style="list-style-type: none"> Grass should be maintained at a height of 100 millimetres or less, at all times. Wherever possible, perennial grasses should be used and well-hydrated with regular application of wetting agents and efficient irrigation.
Defendable space	<ul style="list-style-type: none"> Within three metres of each wall or supporting post of a habitable building, the area is kept free from vegetation, but can include ground covers, grass and non-combustible mulches as prescribed above.
LP Gas Cylinders	<ul style="list-style-type: none"> Should be located on the side of a building furthest from the likely direction of a bushfire or on the side of a building where surrounding classified vegetation is upslope, at least one metre from vulnerable parts of a building. The pressure relief valve should point away from the house. No flammable material within six metres from the front of the valve. Must sit on a firm, level and non-combustible base and be secured to a solid structure.

Appendix 2 – Vehicular Access Technical Requirements

TECHNICAL REQUIREMENTS	1 Public roads	2 Emergency access way ¹	3 Fire service access route ¹	4 Battle-axe and private driveways ²
Minimum trafficable surface (metres)	In accordance with A3.1	6	6	4
Minimum horizontal clearance (metres)	N/A	6	6	6
Minimum vertical clearance (metres)	4.5			
Minimum weight capacity (tonnes)	15			
Maximum grade unsealed road ³	As outlined in the IPWEA Subdivision Guidelines	1:10 (10%)		
Maximum grade sealed road ³		1:7 (14.3%)		
Maximum average grade sealed road		1:10 (10%)		
Minimum inner radius of road curves (metres)		8.5		
Notes: ¹ To have crossfalls between 3 and 6%. ² Where driveways and battle-axe legs are not required to comply with the widths in A3.5 or A3.6, they are to comply with the Residential Design Codes and Development Control Policy 2.2 Residential Subdivision. ³ Dips must have no more than a 1 in 8 (12.5% -7.1 degree) entry and exit angle.				



Appendix 3 – City of Rockingham Fire Control Notice

Fire Control Notice 2021 - 2022

Your property must comply
on 1 December 2021 and be
maintained through to
31 May 2022

First and final notice
to owners and/or occupiers
of all land within the
City of Rockingham

Penalty of up to \$5,000
for non-compliance



As a measure to assist in the control of bushfires and pursuant to the powers contained in **Section 33 of the Bush Fires Act 1954**, you have a legal requirement to carry out fire prevention works on your property. Your property must comply on 1 December 2021 and be maintained through to 31 May 2022.

*"Take notice that pursuant to **Section 33 (4) of the Bush Fires Act 1954**, where the owner and/or occupier of the land fails or neglects to comply with the requisitions of this Notice within the specified times, the City of Rockingham may by its officers and with such servants, workmen and contractors, vehicles and machinery as the officers deem fit, enter upon the land and carry out the requisitions of this Notice which have not been complied with and pursuant to **Section 33 (5) of the Bush Fires Act 1954**, the amount of any costs and expenses incurred may be recovered from you as the owner and/or occupier of the land."* Government Gazette, July 2021.

Compliance inspections will commence on 1 December 2021. Failure to comply with the City's Fire Control Notice may result in a penalty of up to \$5,000, with additional contractor and administration costs to carry out fire prevention works on your property.



All land with an area of 4047 m² or more (more than one acre)

Owners/Occupiers of developed and vacant land are required to:

- Install and maintain mineral earth firebreaks as per firebreak specifications.
- Ensure driveways and access ways to all buildings are maintained at a minimum of three (3) metres in width and a vertical clearance height of four (4) metres, with all over hanging vegetation trimmed back to clear access.

All land with an area of less than 4047 m² (less than one acre)

Owners/Occupiers of vacant land are required to:

- Remove accumulated fuel such as leaf litter, twigs, dead bush and dead trees capable of carrying a running fire.
- Have the entire vacant land clear of weed or long grasses by slashing, mowing or other means to a height no greater than 50 mm and maintained in this state.

Owners/Occupiers of developed land are required to:

- Ensure driveways and access ways to all buildings are maintained at a minimum of three (3) metres in width and a vertical clearance height of four (4) metres, with all over hanging vegetation trimmed back to clear access.

Firebreak Specifications

- Must be not less than three (3) metres wide immediately inside and along all boundaries (including on boundaries adjacent to roads, rail and drain reserves and all public open space reserves).
- Must be not more than four (4) metres wide (further width extensions may be considered upon written application for approval to the City).
- May have a corner turning radius of up to ten (10) metres.
- Must have a vertical clearance height of four (4) metres, with all over hanging vegetation trimmed back clear of the firebreak.
- Must be a mineral earth firebreak with a continuous trafficable surface for a 4WD vehicle, clear of any obstructions and must not terminate in a cul-de-sac (dead end).
- Maintained and living lawns are acceptable in conjunction with or in lieu of mineral earth firebreaks, provided that the same width and height requirements for a firebreak are maintained.

Firebreaks are intended to minimise the spread or extension of a bushfire and provide safe access on your property for emergency vehicles (ensuring fire does not travel under the vehicles or underfoot).



Bushfire Management Plan

(Previously known as a Fire Management Plan). All properties that are subject to a Bushfire Management Plan as a result of a subdivision or development application or an approved treatment plan, must comply with the requirements of such plans in their entirety.

Additional Works

In addition to the requirements of this Notice, regardless of land size and location, you **may** be required to carry out further fire prevention works to reduce hazards **considered necessary by an Authorised Officer**. Any further requirement would be specified by way of a "work order" forwarded to the address of the owner(s) and/or occupier(s).

Some examples of these could be:

- Ensure roofs, gutters and walls of all buildings on the land are free of flammable matter.
- Remove accumulated fuel such as leaf litter, twigs, dead bush and dead trees capable of carrying a running fire.
- Reduce unmanaged grasses/weeds by slashing, mowing or other means.
- Reduce long grasses in areas not being grazed or cultivated by slashing, mowing, bailing or by other means.
- Reduce vegetation to a low threat state from the outer edge of the firebreak through to the property boundary (e.g. no long grass or overhanging branches).
- Assets identified in the City's **Bushfire Risk Management Plan 2018-2022** or any land identified with a treatment plan to reduce risk to assets.

Any owner and/or occupier who engages a contractor to undertake works on their behalf is responsible for ensuring that the completed works meet the requirements of this Fire Control Notice.

Any Fire Control Notice previously published by the City of Rockingham in the Government Gazette or in any locally circulated newsprint is hereby revoked.

Variation to the Fire Control Notice

To request authorisation to use other methods of fire prevention on your land outside of this notice, please apply in writing together with an 'Application to Vary Location and Type of Firebreaks' form (available on the City's website rockingham.wa.gov.au). Submit completed forms to the City of Rockingham no later than 31 October 2021.

If you require further information or would like to talk with a Fire Control Officer, please call **9528 0333** or email firecontrol@rockingham.wa.gov.au



Appendix 4: Kennedy Bay Stage 1 – Golf Course Interface Landscape Concept



