



Bushfire Management Plan

Local Structure Plan Amendment: Alkimos Vista – Precinct 2

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Document No:

A24.278-RPT-BMP-Precinct2_0_FINAL

Issue Date:

09 Jul 2026

Status:

Final

Prepared For:

Stockland

Prepared by:

Terravias

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INTERNAL REVIEW

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09-Jul-2026	09-Jul-2026	09-Jul-2026

REGISTER OF AMENDMENTS

Date	Version	Status	Prepared	Approved	Issued To
09-Jul-2026	0	Final	Beau Eaton	Daniel Panickar	Gigi Fear



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1 Introduction

1.1 Proposal Details

Stockland is seeking to progress a Local Structure Plan (LSP) Amendment for Alkimos Vista – Precinct 2 (hereafter referred to as the subject site, Figure 1.1). The proposed LSP will result in an intensification of land use and involves the development of approximately 158 lots, two Public Open Space (POS) areas, and an extension of Alkimos Drive (Figure 1.2).

The subject site is designated as Bushfire Prone Area 2 as per the Western Australia State Map of Bush Fire Prone Areas (DFES, 2024; Figure 1.3). This triggers bushfire planning requirements under State Planning Policy 3.7 Bushfire (SPP 3.7; WAPC, 2024a) and reporting to accompany submission of the LSP Amendment in accordance with the associated Planning for Bushfire Guidelines (the Guidelines; WAPC, 2024b).

Terravias Pty Ltd (Terravias) was commissioned to prepare a Bushfire Management Plan (BMP) to support the LSP Amendment. This BMP has been prepared by Senior Bushfire Consultant Beau Eaton and endorsed by Senior Principal Bushfire Consultant Daniel Panickar (FPAA BPAD Level 3 Certified Practitioner No. BPAD37802).

1.1.1 Site context

The subject site is located within the City of Wanneroo and is zoned Urban under both the Metropolitan Regional Scheme (MRS) and Local Planning Scheme (LPS). The subject site is comprised predominantly of unmanaged, classifiable vegetation, with some cleared areas in the southern and western portion of the site. The subject site is bound by:

- Northshore Christian Grammar School, and future Shorehaven Estate (currently vacant land) to the north.
- Remnant native vegetation extending to Wanneroo Rd to the east.
- Da Vinci Loop and future stages of Alkimos vista to the south.
- Yanchep Rail Corridor, Maroon Avenue, and Masterpiece Boulevard to the west.

There are several key assumptions and contextual factors relevant to the preparation of this BMP:

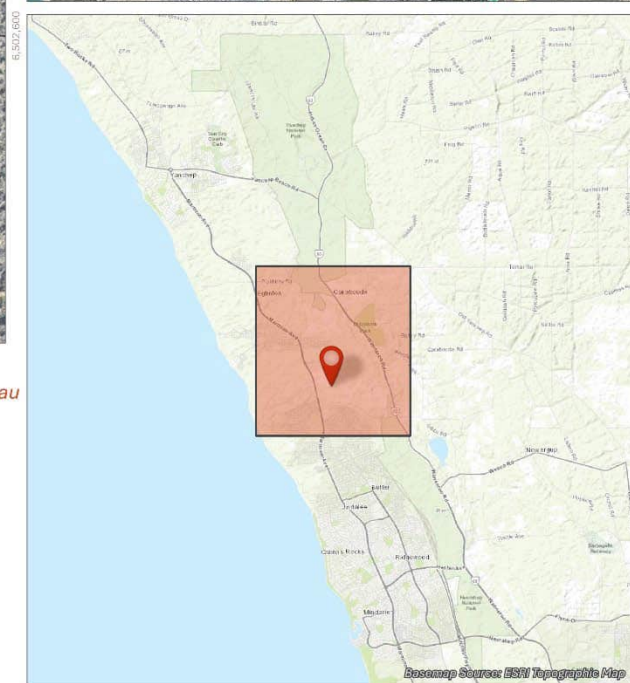
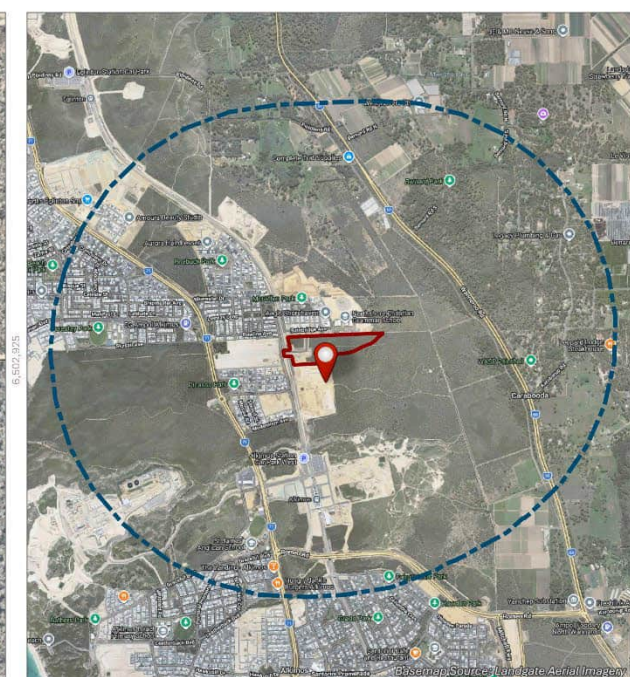
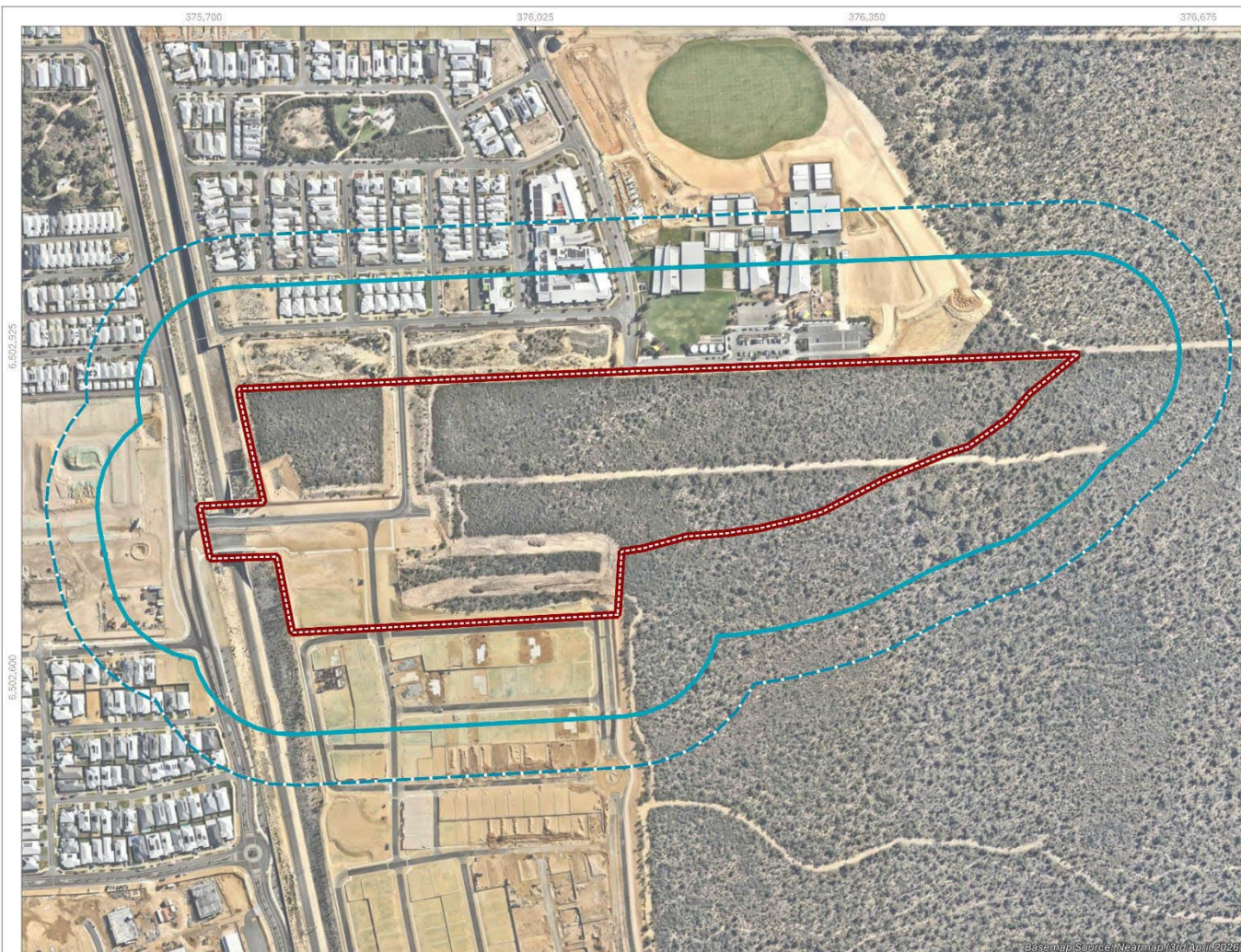
- **Staging of development:** The development is proposed to proceed in stages, with Precinct 2 East progressing independently of the remaining lots (refer to Figure 1.2). The bushfire management measures outlined in later sections of this BMP have been developed considering the proposed staging and associated access constraints.
- **Railway corridor vegetation:** It is understood that vegetation within the adjacent railway corridor is subject to an outstanding work order to landscape targeted areas to low threat vegetation. The proposed works include the removal of 'high risk plant species' to be replaced with 'acceptable species' identified by Development WA. Details of the work order, including the areas subject to low threat treatment, are outline in Appendix A.
- **Clearing and development of Lot 9052:** Land immediately north of the subject site (Lot 9052) forms part of the approved Shorehaven Estate development by Peet (Figure 1.2). Stockland

understands this lot will be cleared and developed ahead of the subject site, removing any regrowth vegetation and facilitating construction of roads along the northern boundary. As there is no contractual agreement between Stockland and Peet for the timing of these works, this BMP also includes a worst-case Bushfire Attack Level (BAL) assessment as a contingency which assumes this land remains in its current state. This demonstrates that development of the subject site can still proceed, subject to building exclusion zones being applied and/or titles for affected lots being withheld until Lot 9052 is cleared and developed.

1.2 Purpose and Application of the BMP

This BMP has been prepared in accordance with SPP 3.7 and the Guidelines to support the assessment of the LSP Amendment for the subject site submitted to the City of Wanneroo.

In addition, this BMP provides strategies and guidance to reduce the level of bushfire risk exposure for the subject site through implementation of a range of bushfire management measures in accordance with the Guidelines.



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0 50 100 150 200 m

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Figure 1.1: Site Overview

- Subject Site
- Buffer 100m
- Buffer 150m
- Buffer 2km

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Figure 1.2: Site Plan



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0 30 60 90 120 m

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- Subject Site
- Precinct 2 East
- Lot Boundary
- POS
- Road Reserve
- Swan Coastal Plain and Perth-Peel Native Vegetation Extent 2024 (DWER-141)
- Environmentally Sensitive Areas (DWER-046)
- Bush Forever Areas - 2000 (DPLH-019)

Threatened and Priority Fauna (DBCA-037)

- ▲ Threatened - Endangered

Threatened and Priority Flora (DBCA-036)

- Priority 1

Threatened Ecological Communities (DBCA-038)

- Priority
- Threatened

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2 Environmental Considerations

SPP 3.7 policy objective 5.4 recognises the need to consider bushfire risk management measures alongside environmental, biodiversity and conservation values.

2.1 Native Vegetation - Modification and Clearing

A high-level desktop review has been undertaken for the subject site utilising the following publicly available datasets:

- Native Vegetation Extent (DPIRD-005) (DPIRD, 2023).
- Geomorphic Wetlands, Swan Coastal Plain (DBCA-019) (DBCA, 2025).
- Clearing Regulations - Environmentally Sensitive Areas (ESA) (DWER-046) (DWER, 2021).
- Threatened Ecological Communities (DBCA-038).
- Threatened and Priority Flora (DBCA-036).
- Threatened and Priority Fauna (DBCA-037).
- Bush Forever Areas 2000 (DPLH-019).

The subject site intersects mapped native vegetation, threatened ecological communities, as well as an ESA (Figure 1.2). The intersected ESA appears to be associated with the identified threatened ecological community (TEC). No wetlands or conservation significant flora and fauna records occur within a 150 m radius of the subject site.

Environmental matters relating to the subject site have been previously considered and reviewed by the Environmental Protection Authority (EPA) under Section 48A of the *Environmental Protection Act 1986* as part of an earlier Metropolitan Region Scheme (MRS) amendment (Darby, 2021). The MRS amendment was supported by the Minister for the Environment in 2006 through Ministerial Statement 722.

The proposed LSP amendment is consistent with the supported MRS amendment and is not expected to result in environmental impacts beyond those previously assessed through the earlier strategic planning and environmental assessment processes.

2.2 Revegetation/Landscape Plans

The proposed LSP amendment includes two (2) POS reserves, as shown on Figure 1.2. The POS in the west of the subject site will include bio retention planting for drainage purposes. The landscape design for the POS reserves, including any proposed drainage basins and swales, will be prepared post LSP approval. In consultation with Stockland, this BMP assumes that the POS reserves will contain low threat landscaping and non-vegetated hardscapes, thereby enabling these areas to be excluded in accordance with Clause 2.2.3.2 (e) and (f) of *Australian Standard AS 3959: 2018 Construction of Buildings in Bushfire Prone Areas* (AS 3959: 2018; SA, 2018). If the City of Wanneroo landscaping and drainage requirements result in the introduction of classified vegetation within the POS reserves, the bushfire assessment in this BMP will need to be revised.

The POS reserves will include landscaping that does not pose a significant bushfire threat due to its type, structure, and level of management. In accordance with Clause 2.2.3.2 of AS 3959:2018, the following areas within the POS reserves qualify as exclusions:

- Low threat landscaping or sparse vegetation which is insufficient to pose a bushfire hazard:
 - Turf-dominant landscapes with sparse or isolated trees with gardens containing irrigated, maintained or low flammability plantings.
 - Windbreaks (single row of trees).
 - Drainage basins and swales vegetated with rushes, sedges and groundcovers not exceeding 500 mm in height at maturity. If the City of Wanneroo requires the use of rushes, sedges and groundcovers that exceed 500 mm in height, the drainage basins and swales will be classified as Class G Grassland and must be set back a minimum 8 m from future homes on residential lots to avoid BAL-40 and BAL-FZ encroachments.
- Non-vegetated areas:
 - Urban hardscapes (roads, carparks, paved areas).
 - Water bodies (wetlands, lakes and ponds).
 - Sand, rocky outcrops or bare earth areas.

Management may include regular tree pruning and mowing of grass, clearing of vegetation, removal of weeds or removal of dead plant material, as deemed appropriate by the local government.

The bushfire assessment within this BMP may be refined prior to endorsement of the Deposited Plan, following review of the landscaping plan for the POS reserve.

3 Bushfire Assessment Results

3.1 Broader Landscape Assessment

3.1.1 Assessment context

The subject site is designated as Area 2 on the Map of *Bush Fire Prone Areas* (OBRM-023; DFES, 2025). In light of this, the following Broader Landscape Assessment (BLA) has been completed to assess the compliance of the proposed LSP amendment against Element 1 (Location) of the Guidelines. An overview of the BLA area is presented in Figure 1.1.

3.1.1.1 Step 1: Determine the BLA area

For the purposes of this desktop assessment, all areas within 2 km of the subject site boundary have been included in the BLA (Figure 1.1).

3.1.1.2 Step 2: Assess and map the broader landscape

2.1: Assess and map vegetation

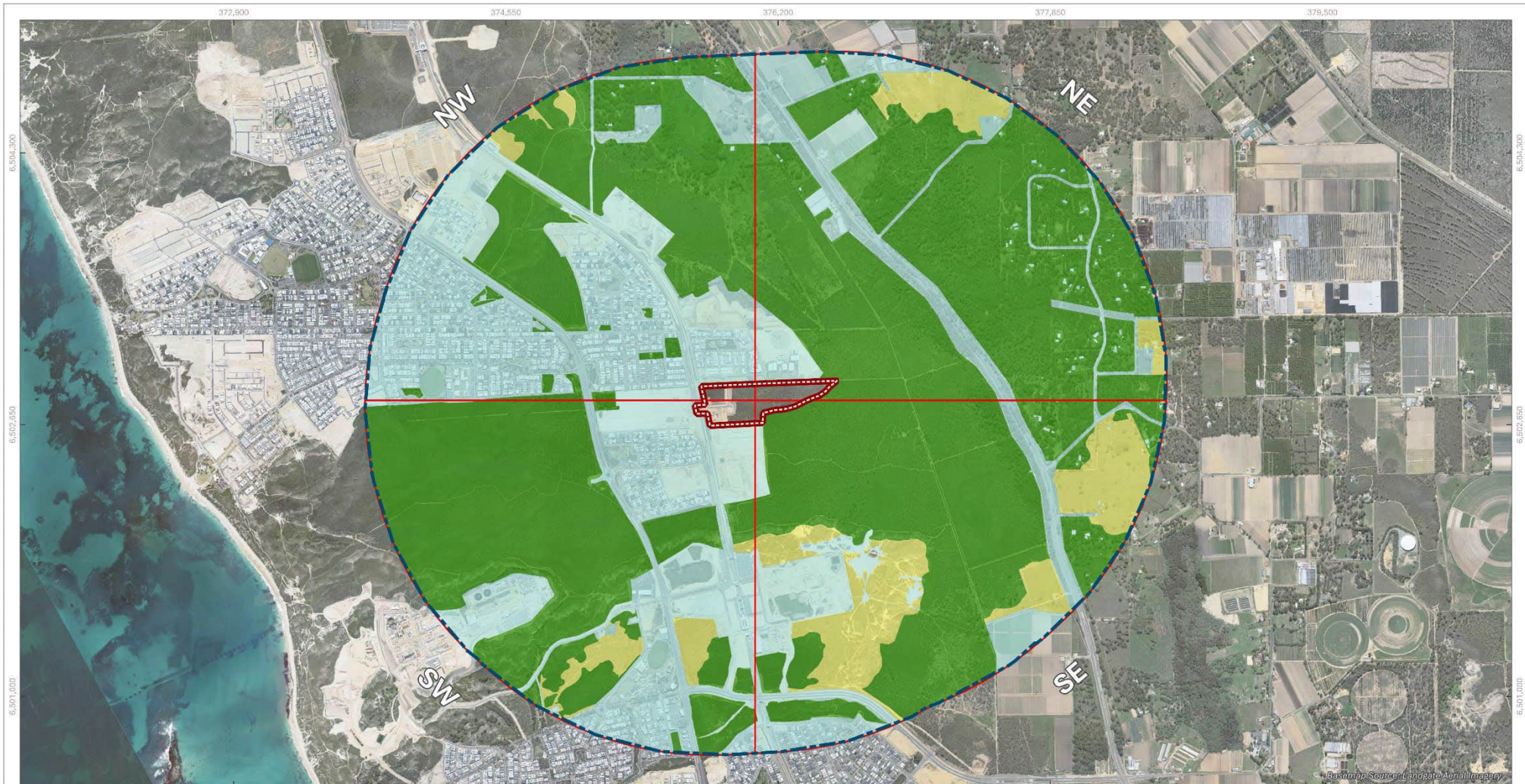
Using up to date aerial imagery, the structure of vegetation falling within the BLA area were assessed and categorised (Figure 3.1). The categories align with classified vegetation and exclusions under *Australian Standard (AS) 3959: Construction in Bushfire Prone Areas* (AS 3959) as per the following:

- Areas of low-threat vegetation and non-vegetated areas.
- Areas of unmanaged grassland (Class G Grassland).
- Areas of all other types of classified vegetation.

Consideration has been given to any known revegetation and areas of environmental, biodiversity or conservational value in assigning categories to vegetation within the BLA area.

2.2: Assess and map aspects

The BLA has been broken down into four quadrants depending on their aspect in relation to the subject site (Figure 3.1). The exposure of the proposed LSP to identified bushfire hazards has been assessed in relation to each of these aspects (Table 3.1).



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0 200 400 600 800 1,000 m

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Figure 3.1: Vegetation Aspect

Subject Site
 Buffer 2km

Mapped Vegetation

Low threat/non vegetated
 Unmanaged grassland
 All other classified vegetation

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Table 3.1: Description of Vegetation Within Each of the Map Quadrants

Aspect	Bushfire hazard description
Northeast	Quadrant contains mostly large tracts of classified vegetation (excluding Class G Grassland) and mosaic pattern vegetation associated with rural residential landholdings. The largest non-vegetated area in this quadrant is associated with Wanneroo Road that runs through the centre from north to south (Figure 3.1). The large tract areas provide sufficient fuel for a landscape-scale bushfire to run from Wanneroo Road to the eastern border of the subject site.
Southeast	Quadrant contains mostly large tracts of classified vegetation (excluding Class G Grassland). This vegetation directly abuts the subject site and provides a continuous fire run extending more than 1 km to the south-east. Small patches of non-vegetated areas and grass dominated plains occur in the south of this quadrant.
Southwest	Quadrant predominantly contains large tracts of classified vegetation (excluding Class G Grassland). The risk of a landscape-scale bushfire to the development from this quadrant is considered low, given the large tracts of vegetation are separated by hundreds of metres of low threat and non-vegetated areas.
Northwest	Quadrant predominantly contains low threat vegetation or non-vegetated areas mostly associated with residential housing. There are large tracts of classified vegetation (excluding Class G Grassland), in the central and north-eastern part of this quadrant, however, these are separated from the site by hundreds of metres of low threat and non-vegetated areas.

The exposure of the proposed LSP to an identified external bushfire hazard is from two aspects – Northeast and Southeast.

2.3: Assess and map the predominant vegetation pattern

Using the vegetation assessment undertaken in Step 2.1, the predominant vegetation pattern was determined based on the following three categories:

- Cleared vegetation (e.g. residential or urban zoned and developed land).
- Mosaic pattern of vegetation (including Class G Grassland and vegetation within rural living precincts).
- Large tracts of classified vegetation (e.g. contiguous vegetation within reserves or national parks which facilitate fire runs at least 1 km long and 100 m wide).

The predominant vegetation pattern within the BLA area is large tracts of classified vegetation. The following breakdown of the vegetation patterns have been mapped in Figure 3.2:

- Cleared vegetation: 34 %
- Mosaic: 27 %
- Large tracts: 38 %

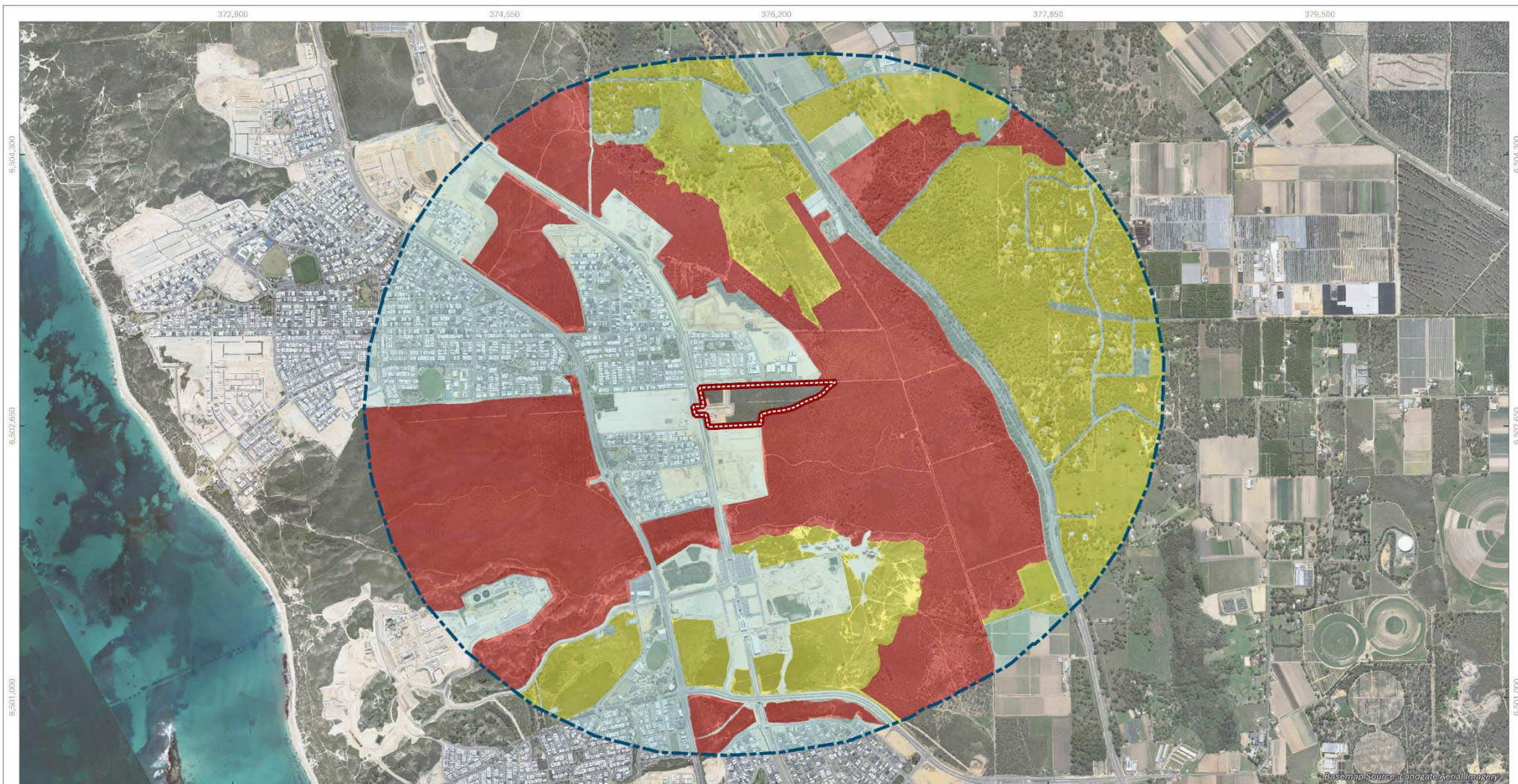


Figure 3.2: Predominant Vegetation Pattern

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 Subject Site
 Buffer 2km

Vegetation Pattern

 Low threat/non vegetated
 Mosaic pattern
 Large tracts of classified vegetation

2.4: Assess and map road pattern and suitable destination(s)

The public road network surrounding the subject site was mapped and assessed to establish the level of vehicular access to the proposed LSP area. Potential escape routes to suitable destinations have been mapped and highlighted within Figure 3.3. In order to assess the complexity of these escape routes, the following details have been assessed and displayed:

- Main Roads WA road hierarchy.
- The location of intersections along each of the escape routes.
- Any cul-de-sacs exceeding 100 m in length which are within a 1 km drive distance of the escape routes.
- The length of each of the escape routes to a suitable destination.

The analysis resulting in the outputs in Figure 3.3 is briefly detailed below.

Escape routes, road intersections and cul-de-sacs were generated from Main Roads WA - Road Hierarchy (MRWA, 2024), a polyline dataset representing road centrelines spatially.

Escape routes used the geometry of the polylines to connect subject site access points to suitable destinations using the most efficient trafficable paths. Road intersections were points derived from the intersection of any polyline features within the dataset and cul-de-sacs were points derived from polyline end nodes not connected to other polyline features.

Significant intersections were defined as intersections on the escape route where:

- There is change in road name of roads on the escape route (e.g. Road Name A leading to Road Name B, both on the escape route);
- There is change in road category of roads on the escape route (Primary Distributor Road leading to Local Distributor Road, both on the escape route);
- There is road of a higher category leading off the escape route (e.g. Primary Distributor Road leading off the escape route connected to Local Distributor Road on the escape route); or
- There is a traffic signal present at the intersection on the escape route.

Significant cul-de-sacs were defined as cul-de-sacs in the vicinity of the escape route which are:

- Longer than 100 m in length (i.e. greater 100 m driving distance to any road interaction); and
- Less than 1 km driving distance from the end of the cul-de-sac to the nearest intersection on the escape route.

3.1.2 Summary of Access Routes to a Suitable Destination

A short and direct route to a suitable destination is available over a distance of 0.6 km, with limited intersections. This route heads in a northerly direction and requires only three turns at intersections before arriving at the suitable destination (Figure 3.3).

A secondary route to another suitable destination is available over a 2.2 km distance heading east from the subject site. This route is considered to be relatively direct, with only three turns at intersections required.

Both suitable destinations are considered appropriate refuge locations given they:

- Occur in areas that are not bushfire prone.
- Are more than 100 m from classifiable vegetation.
- Are situated in a reticulated water area.
- Are areas accessible to the general public.
- Have large car parks to accommodate evacuee vehicles.
- Have large open spaces comprised of managed vegetation or devoid of vegetation for gathering.

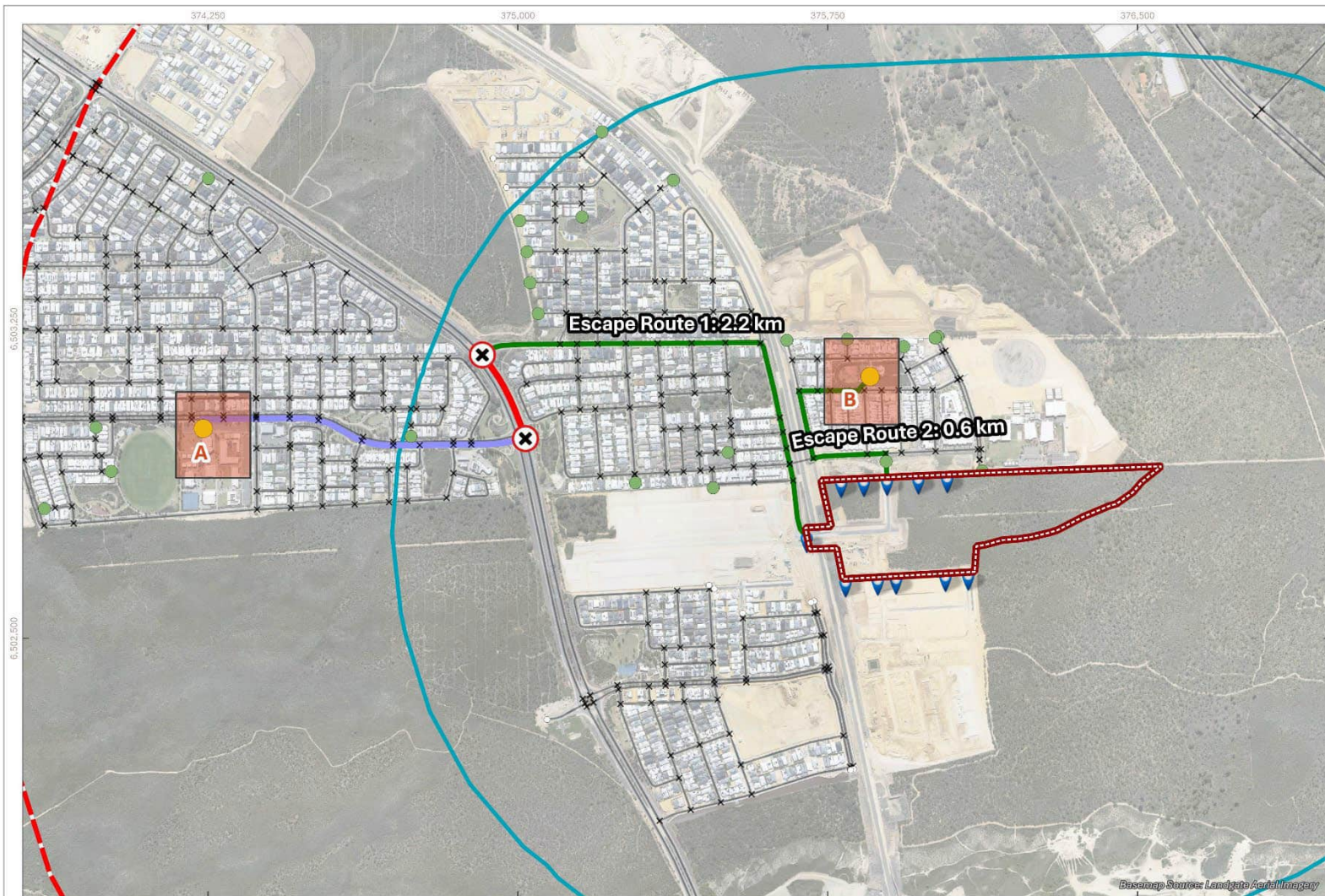


Figure 3.3: Road Patterns and Suitable Destinations

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0 100 200 300 400 m

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- Subject Site
- Buffer 1km
- Buffer 2km

- Traffic signal
- Road Hierarchy (MRWA)
- Access point
- Suitable destination

- EscapeRoute**
- Primary Distributor
 - District Distributor
 - Local Distributor
 - Access Road

- × Road intersection
- × Significant intersection along the escape route
- Cul-de-sac
- Cul-de-sac (longer than 100m within a 1km drive distance of the escape route)

3.1.2.1 Step 3: Establish the Broader Landscape Type (BLT)

Using the information gathered throughout Steps 1 and 2, the BLT has been determined using a points-based system as presented in Table 3.2 below.

Table 3.2: Determination of the Broader Landscape Type

Criteria	5 points	2 points	1 point	Points
Proximity of the planning proposal to a suitable destination by way of road travel is:	☐ >10 km	☐ 1 – 10 km	☒ <1 km	1
The road pattern from the planning proposal to a suitable destination is:	☐ Complex and indirect (cul-de-sacs, multiple intersections)	☐ Mixed road patterns	☒ Simple and/or direct (limited intersections)	1
The predominant vegetation pattern is:	☒ Large tracts of vegetation (contiguous vegetation)	☐ A mosaic pattern of vegetation (e.g. vegetation within rural living precincts)	☐ Cleared vegetation (e.g. clearing for residential zoned urban lots)	5
Exposure of the planning proposal to an identified external bushfire hazard (excluding Class G Grassland) is from:	☐ Three or four aspects	☒ Two aspects	☐ From nil or one aspect only	2
TOTAL POINTS:				9
Total points		Broader landscape type		A
0 – 11 points		Broader landscape type A		☒
12 – 20 points		Broader landscape type B		☐

As per the above analysis, the subject site is within broader landscape type A.

3.2 Bushfire Attack Level Assessment Inputs

A bushfire assessment has been undertaken for the proposed LSP in accordance with the Guidelines. Inputs to this assessment are detailed below.

3.2.1 Fire Danger Index

A blanket Fire Danger Index (FDI) 80 is adopted for Western Australia, as outlined in *Australian Standard AS 3959: 2018 Construction of Buildings in Bushfire Prone Areas* (SA, 2018).

3.2.2 Pre-Development Vegetation Classification and Slope under Vegetation

Vegetation and effective slope (i.e. slope under vegetation) within the subject site and surrounding 150 m (the assessment area) were assessed on 4/06/2026 in accordance with the Guidelines and AS 3959: 2018.

The pre-development classified vegetation and effective slope for the site from each of the identified vegetation plots are identified below in Table 3.3 and Figure 3.4.

Table 3.3: Pre-Development Classified Vegetation as per AS 3959: 2018

Plot	Vegetation classification	Effective slope
1	Class C Shrubland	Downslope >15 to 20 degrees
2	Class C Shrubland	All upslopes and flat land (0 degrees)
3	Class D Scrub	Downslope >0 to 5 degrees
4	Class D Scrub	All upslopes and flat land (0 degrees)
5	Excluded - clause 2.2.3.2 (e)	-
6	Excluded - clause 2.2.3.2 (f)	-

Photographs relating to each area and vegetation type are included in Appendix C.

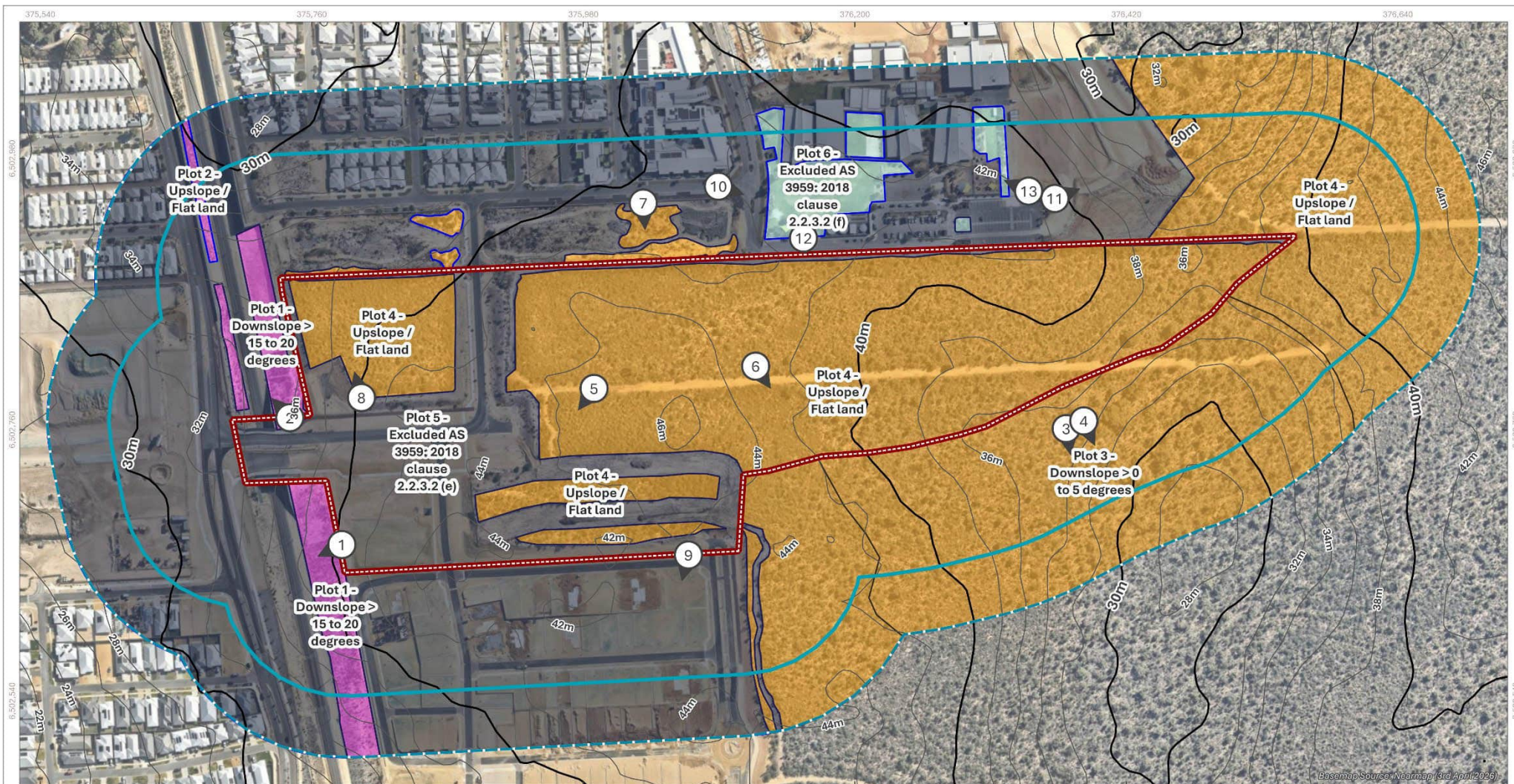


Figure 3.4: Pre-Development Vegetation Classification

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0 30 60 90 120 m

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- Subject Site
- Buffer 100m
- Buffer 150m
- Photo location
- Contours (DPIRD-072)**
- 2m
- 10m
- Vegetation Classification**
- Class C - Shrubland
- Class D - Scrub
- Excluded AS 3959: 2018 2.2.3.2 (e)
- Excluded AS 3959: 2018 2.2.3.2 (f)

3.2.3 Post-Development Assumptions

The assumed post-development vegetation classifications and effective slopes are presented in Table 3.4 and shown in Figure 3.5.

The following has been assumed for the post-development extent:

- All land inside the subject site will be cleared ahead of construction.
- The two proposed POS will be landscaped as low threat vegetation as described in Section 2.2.
- A portion of vegetation within the railway corridor, adjacent to the west of the subject site, will be landscaped as low threat vegetation in accordance with PTA's work order (Appendix A).
- Lot 9052, directly adjacent to the north of the subject site, will be cleared of vegetation ahead of development. In the event this does not occur prior to the development of the subject site, the Class D Scrub vegetation present in Lot 9052 (Figure 3.4) will remain and pose a bushfire hazard to adjacent lots (Appendix B).
- All other vegetation will remain as per the pre-development extent.

Table 3.4: Post-Development Classified Vegetation as per AS 3959: 2018

Plot	Vegetation classification	Effective slope
1	Class C Shrubland	Downslope >15 to 20 degrees
2	Class C Shrubland	All upslopes and flat land (0 degrees)
3	Class D Scrub	Downslope >0 to 5 degrees
4	Class D Scrub	All upslopes and flat land (0 degrees)
5	Excluded - clause 2.2.3.2 (e)	-
6	Excluded - clause 2.2.3.2 (f)	-

3.3 Bushfire Attack Level Assessment Outputs

A Bushfire Attack Level (BAL) assessment has been undertaken in accordance with SPP 3.7, the Guidelines, AS 3959: 2018 and the bushfire assessment inputs in Section 3.2.

3.3.1 BAL Assessment

All land located within 100 m of the classified vegetation depicted in Figure 3.5 is considered bushfire prone and is subject to a BAL assessment in accordance with 3959: 2018.

A Method 1 BAL assessment (as outlined in AS 3959: 2018) has been completed for the proposed development and incorporates the following factors:

- Fire Danger Index (FDI) rating.
- Vegetation class.
- Slope under classified vegetation.
- Distance between proposed subdivision area and the classified vegetation.

Based on the identified BAL, construction requirements for relevant buildings/structures can then be assigned. The BAL rating gives an indication of the expected level of bushfire attack (i.e. radiant heat flux, flame contact and ember penetration) that may be received by proposed buildings and subsequently informs the standard of construction required to increase building survivability.

3.3.2 Method 1 BAL Assessment

Table 3.5 and Figure 4.1 display the Method 1 BAL assessment (in the form of BAL contours) that has been completed for the proposed LSP amendment using the post-development vegetation classifications, in accordance with AS 3959: 2018 methodology.

Table 3.5: Method 1 BAL Calculation (BAL Contours)

Plot	Vegetation classification	Effective slope	Separation distances required (m)				
			BAL-FZ	BAL-40	BAL-29	BAL-19	BAL-12.5
1	Class C Shrubland	Downslope >15 to 20 degrees	<10	10-<15	15-<22	22-<31	31-<100
2	Class C Shrubland	All upslopes and flat land (0 degrees)	<7	7-<9	9-<13	13-<19	19-<100
3	Class D Scrub	Downslope >0 to 5 degrees	<11	11-<15	15-<22	22-<31	31-<100
4	Class D Scrub	All upslopes and flat land (0 degrees)	<10	10-<13	13-<19	19-<27	27-<100
5	Excluded - clause 2.2.3.2 (e)	-	No separation distances required - BAL-LOW				
6	Excluded - clause 2.2.3.2 (f)	-	No separation distances required - BAL-LOW				

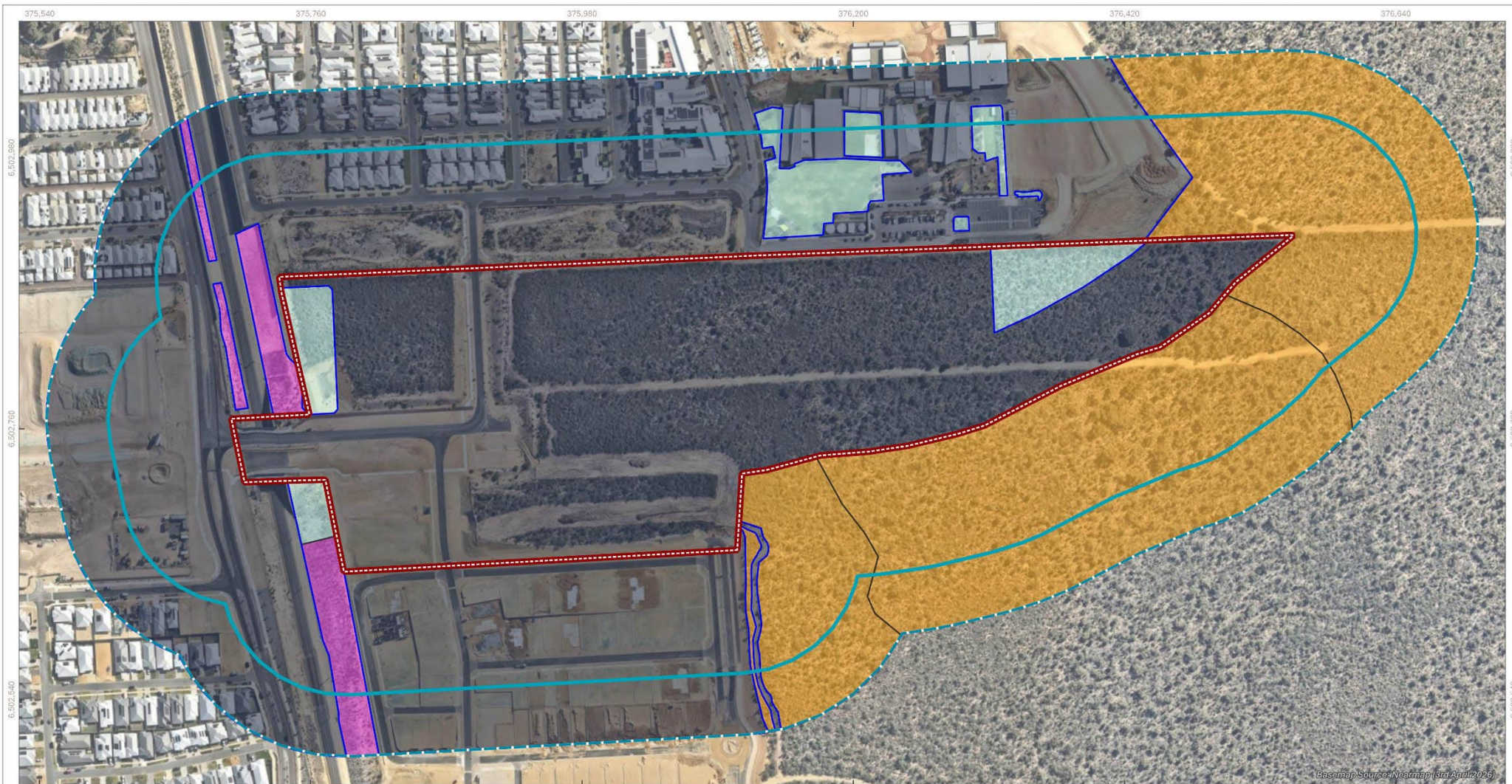


Figure 3.5: Post-Development Vegetation Classification

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0 30 60 90 120 m

COORDINATE REFERENCE SYSTEM:
GDA2020 / MGA Zone 50

SCALE:
1:4,400

PROJECT NUMBER:
A24.278

DRAWN BY / REVIEWED BY:
SM / BE

3/7/2026



- Subject Site
- Buffer 100m
- Buffer 150m

Vegetation Classification

- Class C - Shrubland
- Class D - Scrub
- Excluded AS 3959: 2018 2.2.3.2 (e)
- Excluded AS 3959: 2018 2.2.3.2 (f)

4 Identification of Bushfire Hazard Issues

Post-development, all lots will be subject to BAL ratings of $\leq$ BAL-29. Most lots will be subject to BAL ratings of BAL-12.5 or BAL-LOW, with the exception being four lots labelled Lots A-D in the south-west corner of the subject site that will be subject to BAL-19 or BAL-29 ratings (Figure 4.1). Of these lots, the following can achieve reduced BAL ratings provided a rear of lot setback is applied (Figure 5.1):

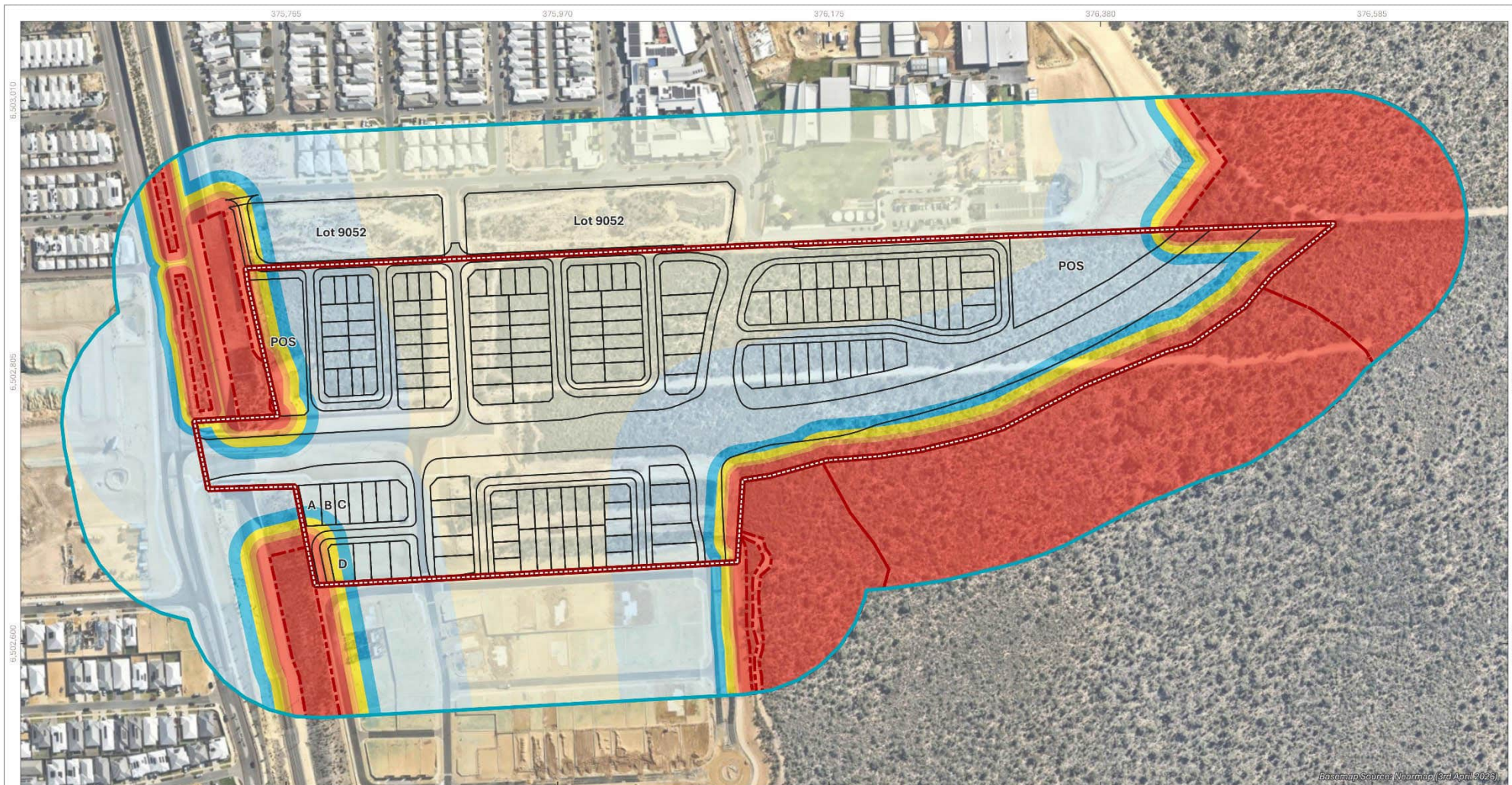
- Lot B can achieve a reduced BAL rating of BAL-19 provided a future building is set back a minimum of 3 m from southern boundary of the lot.
- Lot C can achieve a reduced BAL rating of BAL 12.5 provided building is set back a minimum of 6 m from southern boundary of the lot.

Note, the lots adjacent to Lot 9052 will only receive BAL ratings of BAL-12.5 or BAL-LOW provided Lot 9052 is cleared of vegetation ahead of development to meet exclusion 2.2.3.2 (e) of AS 3959:2018. In the event this does not occur, the worst-case BAL contours and associated BAL ratings shown in Appendix B will apply. This worst-case scenario will include some lots subject to BAL-40 and BAL-FZ. To address this, Lots E-S will either:

- Have a building exclusion zone established to the extent shown in Appendix B, to ensure all lots achieve BAL ratings $\leq$ BAL-29.
- Have lots subject to BAL-40 and BAL-FZ withheld from title until such time the vegetation on Lot 9052 is removed and the BAL contours as shown in Appendix B apply.

These measures have been added as a responsibility of the developer in Section 6 of this BMP.

A reassessment of BAL ratings, through either a BMP addendum or revised BMP will be undertaken if changes to development design or classified vegetation within the assessment area which require a modified bushfire management response occur.



Basemap Source: Noamap (3rd April 2023)

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Figure 4.1: Bushfire Attack Level (BAL) Contours

- Subject Site
- Buffer 100m
- Lot boundary
- Bushfire hazard interface

Bushfire Attack Level (BAL)

- BAL-FZ
- BAL-40
- BAL-29
- BAL-19
- BAL-12.5
- BAL-LOW



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0 30 60 90 120 m

COORDINATE REFERENCE SYSTEM:
GDA2020 / MGA Zone 50

SCALE: 1:4,100 PROJECT NUMBER: A24.278

DRAWN BY / REVIEWED BY:
SM / BE 3/7/2026



5 Assessment Against the Bushfire Protection Criteria

5.1 Compliance

The proposed LSP amendment is required to comply with policy measures 7.1 and 7.2 of SPP 3.7 and Bushfire Protection Criteria 5 of the Guidelines.

Table 5.1 outlines the Acceptable Solutions (AS) that are relevant to the proposal and summarises how the intent of each Bushfire Protection Criteria has been achieved through the application of bushfire risk management measures. No Outcomes-based Approaches (OA) have been proposed for this LSP amendment. These management measures are depicted in Figure 5.1 where relevant.

Implementation of this BMP is expected to meet objectives 5.1-5.4 of SPP 3.7.

Table 5.1: Assessment Against the Bushfire Protection Criteria 5

Bushfire Protection Criteria 5	AS	OA	N/A
Element 1: Location			
A1.1 Broader Landscape Assessment	✓	☐	☐
As outlined in Section 3.1, the outcome of the BLA was a Broader Landscape Type A for the subject site. The proposed LSP is considered compliant with A1.1.			
Element 2: Siting and design			
A2.1 Siting and design	✓	☐	☐
Post-development, all lots will be subject to BAL ratings of ≤BAL-29 (Figure 4.1 and Figure 5.1). This is contingent on several factors mentioned in earlier sections, including: - The two proposed POS being landscaped as low threat vegetation. - A portion of vegetation within the railway corridor, adjacent to the west of the subject site, being landscaped as low threat vegetation in accordance with PTA's work order (Appendix B). - Lot 9052 being cleared of vegetation ahead of development. In the event Lot 9052 is not cleared ahead of development, the BAL Contours as shown in Appendix B will apply and lots E-S will need to adopt one of the following options to ensure they achieve BAL ratings ≤BAL-29: - Have a building exclusion zone established to the extent shown in Appendix B. - Have lots with BAL ratings subject to BAL-40 and BAL-FZ withheld from title until such time the vegetation on Lot 9052 is removed and the BAL contours as shown in Appendix B apply. The proposed LSP amendment is considered to be compliant with A2.1.			
A2.2 Asset Protection Zone (APZ)	☐	☐	✓
Not applicable – No APZs are proposed. In the event Lot 9052 is not cleared of vegetation prior to development of the subject site, a building exclusion zone will be applied or lots will be withheld from title to ensure all future dwellings will not be exposed to a radiant heat flux exceeding 29 kW/m². The proposed LSP amendment is considered to be compliant with A2.2.			

Bushfire Protection Criteria 5	AS	OA	N/A
A2.3 Clearing of native vegetation	✓	☐	☐
As mentioned in Section 2.2, past iterations of the North Alkimos Local Structure Plan have had environmental management provisions issued by the Minister for the Environment. Therefore, environmental values have already been considered in past iterations of the LSP. The proposed LSP amendment is considered to be compliant with A2.3			
Element 3: Vehicular access	✓	☐	☐
A3.1 Public roads			
The subject site is accessed via existing public roads, including Renaissance Drive, Alkimos Drive, Scotthorn Drive, and multiple road connections to future Fryatt Avenue along the northern boundary of the subject site (Figure 1.2 and Figure 5.1). The Guidelines do not prescribe values for the trafficable (carriageway/pavement) width of public roads as they should be in accordance with the class of road as specified in the IPWEA Subdivision Guidelines, Liveable Neighbourhoods, Austroad Standards and/or any applicable standard in the local government area. Proposed roads within the subject site will be designed according to Liveable Neighbourhoods. Terravias' assessment, however, has identified that the roads surrounding the development are bitumen with estimated width of the sealed surface achieving a minimum width of 6 m. The existing road network is therefore considered to provide suitable access and egress for the community and emergency services personnel in the event of a bushfire. Vehicular access technical requirements in accordance with the Guidelines are detailed in Appendix D. The proposed LSP amendment is considered to be compliant with A3.1.			
A3.2 Access routes	✓	☐	☐
Multiple access routes from the subject site to more than two suitable destinations are available via Alkimos Drive and future northern connection of Fryatt Road (Figure 1.2 and Figure 5.1). Access to the site will be available via 10 different access points (Figure 5.1). Refer to A3.1 above for details regarding vehicular access technical requirements for public roads. The proposed LSP amendment is considered to be compliant with A3.2.			
A3.3a No-through roads	☐	☐	✓
Not applicable – no proposed roads are no through roads. The southern road in Precinct 2 East will initially connect to the Scotthorn Drive intersection. Once the intersection is constructed to its ultimate standard as a signalised intersection, a through-road connection at this location will no longer be possible due to engineering and vehicle safety constraints. At this stage, the road will be converted to a cul-de-sac, with an Emergency Access Way (EAW) constructed to maintain a through-road connection to Scotthorn Road in the event of an emergency (Figure 5.1). Refer to Section A3.4 for further detail. All other roads will connect through to the existing public road network.			
A3.3b No-through road requirements	☐	☐	✓

Bushfire Protection Criteria 5	AS	OA	N/A
Not applicable – no proposed roads are no through roads.			
A3.4 Emergency access way	✓	☐	☐
An Emergency Access Way (EAW) is proposed at the western terminus of the southern road in Precinct 2 East (Figure 5.1). The EAW will be less than 500 m in length, provide a connection to a public road, and be constructed as per the Guideline requirements (Appendix D). Note that this intersection will initially connect to Scotthorn Drive as part of the interim road design. When the Alkimos Drive and Scotthorn Drive intersection is constructed to its ultimate standard as a signalised intersection, a through-road connection at this location will not be possible due to engineering and vehicle safety constraints. At this stage, the road will be converted to a cul-de-sac, with an Emergency Access Way (EAW) constructed to maintain a connection to Scotthorn Road in the event of an emergency (Figure 5.1).			
A3.5a Perimeter roads	☐	☐	✓
Not applicable – not lots directly abut classified vegetation (Figure 5.1).			
A3.5b Fire service access route	☐	☐	✓
Not applicable – not lots directly abut classified vegetation (Figure 5.1).			
A3.6 Battle-axe access legs	☐	☐	✓
Not applicable – no battle-axe access legs are proposed.			
Element 4: Water supply	✓	☐	☐
A4.1 Water supply for structure plans	Existing reticulated water is present within the area and the subject site will be connected to this water supply. Existing hydrants are already located within the subject site (Figure 5.1). Terravias assumes the surrounding network of hydrants meet Water Corporation specifications given they are established and within the Perth metropolitan area. Hydrants within the subject site will be provided in accordance with relevant Water Corporation specifications. The proposed LSP amendment is considered to be compliant with A4.1.		
A4.2 Water supply for subdivision applications	☐	☐	✓
Not applicable – does not apply for LSP amendments.			
A4.3 Water supply for existing habitable buildings	☐	☐	✓
Not applicable – The development does not include existing habitable buildings.			

Note: AS - Acceptable Solution, OA - Outcomes-based Approach, N/A - Not Applicable.

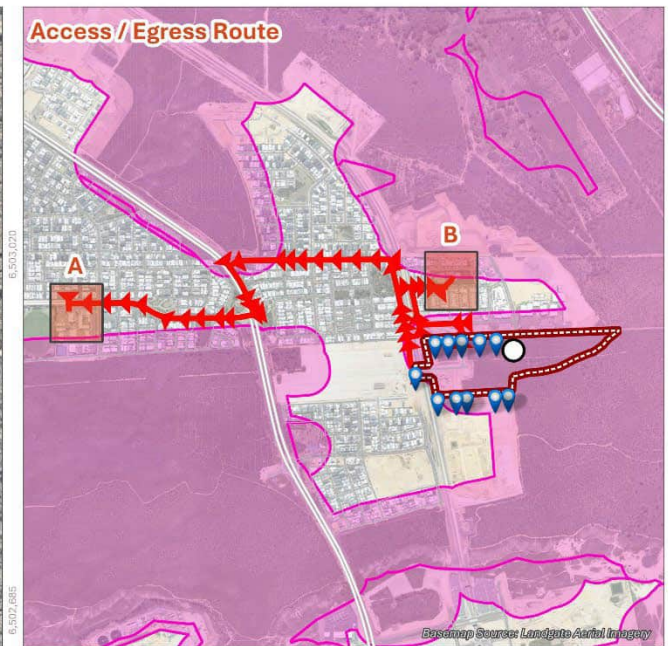
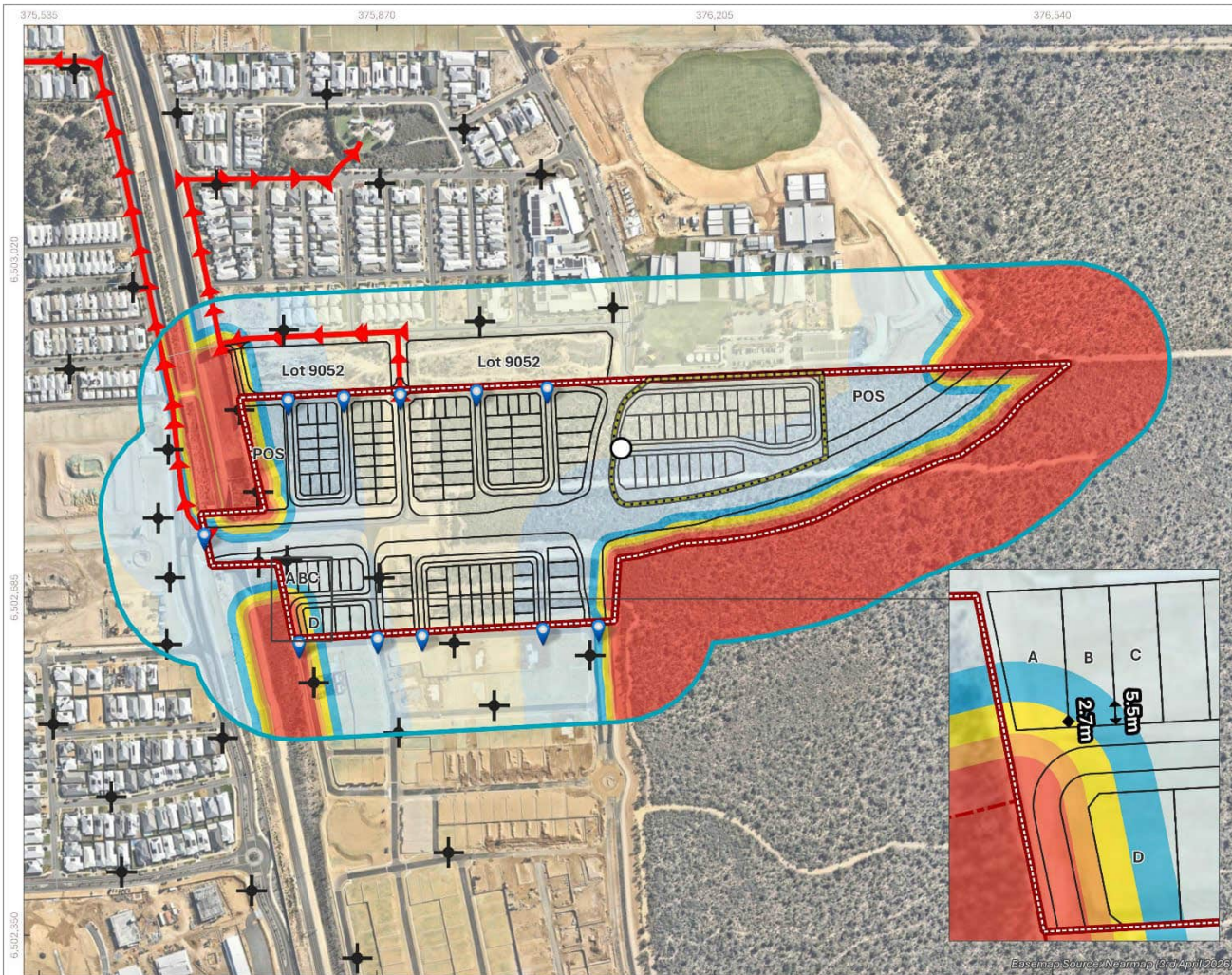


Figure 5.1: Bushfire Mitigation Measures

- | | |
|-----------------|--------------------------------------|
| Subject Site | Water Hydrant (WCORP-070) |
| Precinct 2 East | Access point |
| Buffer 100m | Future cul-de-sac / EAW access point |
| Lot boundary | Access / egress route |
| | Bushfire Prone Area 2 (OBRM-023) |

Bushfire Attack Level (BAL)

- | | |
|--|----------|
| | BAL-FZ |
| | BAL-40 |
| | BAL-29 |
| | BAL-19 |
| | BAL-12.5 |
| | BAL-LOW |

6 Responsibilities for Implementation and Management of Bushfire Management Measures

Implementation of the BMP applies to the developer, the WAPC, the City of Wanneroo, and future landowners to ensure bushfire management measures are adopted and implemented on an ongoing basis. This BMP has been prepared as a strategic guide to demonstrate how development compliance will be delivered at future planning stages in accordance with the Guidelines. In this respect, management measures documented in Section 5 will be implemented through the future subdivision design, where applicable.

The preparation of BMPs to accompany future subdivision applications will need to include a detailed works program to outline the measures, timing and responsibilities for implementation the bushfire risk management measures required to comply with the Guidelines. BMPs prepared for the subdivision of individual precincts will need to consider the following:

- The subdivision design for individual precincts shall incorporate hazard separation between areas of classified vegetation and future development sites to ensure the radiant heat impact does not exceed 29kW/m² (BAL-29).
- The vegetation classifications within POS reserves may be subject to change following preparation of landscaping plans at subdivision stage.
- Emergency access ways provided where public road access in two different directions to two different suitable destinations is not achievable due to the staging of development.
- Prioritisation of temporary perimeter roads to separate areas of temporary bushfire hazards from future development sites.
- Reticulated water supply network and hydrant connections provided in accordance with Water Corporation technical specifications.
- In the event clearing of Lot 9052 does not occur prior to subdivision applications being lodged, the worst-case BAL contours and associated BAL ratings shown in Appendix B will apply. This worst-case scenario will include some lots subject to BAL-40 and BAL-FZ. To address this, Lots E-S will either:
 - Have a building exclusion zone established to the extent shown in Appendix B, to ensure all lots achieve BAL ratings ≤BAL-29.
 - Have lots subject to BAL-40 and BAL-FZ withheld from title until such time the vegetation on Lot 9052 is removed and the BAL contours as shown in Appendix B apply.

Aside from the preparation of BMPs to accompany future subdivision applications demonstrating compliance with the above requirements, there are no further items to implement, enforce or review at this stage of the planning process.



7 Conclusion

In the professional opinion of the author, the proposed LSP amendment satisfies the intent, aim and objectives of SPP 3.7 and the Guidelines and is recommended for approval.



8 References

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8.1 Datasets Used

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Appendix A:
Yanchep Rail Extension - Rail Corridor
Landscape Zone Vegetation
Management for Bushfire



24 September 2025

Laura Bowdell
Senior Development Manager
Stockland
Level 12, Durack Centre
263 Adelaide Terrace, Perth WA 6000

Dear Laura,

Re: Yanchep Rail Extension - Rail Corridor Landscape Zone Vegetation Management for Bushfire

This letter is the PTA's response to correspondence received from Mike Scott of Bushfire Prone Planning on behalf of Stockland and Development WA (ref: 210864) dated 3 September 2025.

The PTA has complied with all requirements in relation to approvals for the project. The PTA therefore has no obligation to alter landscaped areas within the Yanchep Rail corridor to suit Development WA subdivision requirements or conditions.

As requested by Development WA, the PTA will however agree to remove the 'high risk plant species' and replant with 'acceptable species' as identified by Development WA, on the condition that Development WA agree to reimburse the PTA for the cost of carrying out this work.

As per Development WA's original request to address the items raised by Bushfire Prone Planning, the PTA considers the following actions must occur to maintain the corridor in a suitable condition:

1. The following plant species are able to be removed from the areas marked in Attachment 1 – Acacia Lasiocarpa, Acacia Pulchella, Beaufortia Elegans, Leucophyta Brownii, Melaleuca Heugelii, Olearia Axillaris, Templetonia Retusa.
2. The project required vegetation coverage will be impacted by this removal due to them being quick growing, good coverage species. Replacement species will need to be planted at a higher density rate than current species.
3. The slopes are stable at the moment so removal should not have an adverse impact as long as the higher density replacement planting is completed next winter.
4. Noting that any stormwater from outside the corridor is not permitted to discharge into the corridor. Whilst erosion is presently not considered a risk due to the areas already withstanding two winter periods, this is a reminder to Development WA that any temporary or permanent construction works must ensure that no runoff from the adjacent embankments enters the rail corridor.

The PTA has taken Development WA's request for a fixed cost into consideration and provides the following quotation of \$51,722.10 ex.GST for these works. The PTA will not commence these works until full payment is received.

Scope of Works Description	Estimated Cost (ex. GST)	Notes
Pre-work - Target weed control	\$ 3,500.00	Target weed control to these areas a few weeks prior to disturbing the soil, which will happen during removal of unwanted species as more bare areas means more exposure to weed seed germination.
Species removal	\$ 3,200.00	Includes disposal
Plant replacement S&I	\$ 10,500.00	Infill replacement with approved species to occur winter 2026
Ongoing control of unwanted species	\$ 3,600.00	Approx. 10months duration until infill replacement planting is undertaken
Protection Officer	\$ 13,200.00	Required for working in live corridor
Direct Costs estimate	\$ 34,000.00	
Project Contract costs estimate	\$ 12,772.10	Includes Overheads, Contingencies, Non-conformance allowance and margin, all as fixed % per the Project Agreement for NWA.
PTA Costs	\$ 5,000.00	PTA supervision and inspections for works post NWA demobilisation.
TOTAL ESTIMATE ex.GST	\$ 51,772.10	
10% GST	\$ 5,177.21	
TOTAL ESTIMATE inc.GST	\$ 56,949.31	

This offer is valid for 30 days. Please return a signed copy of this letter and purchase order number for the purposes of invoicing if Development WA would like the PTA to proceed.

Yours sincerely,



Garry Bloxham
PRINCIPAL PROJECT DIRECTOR OMTID YRE
Public Transport Authority of WA

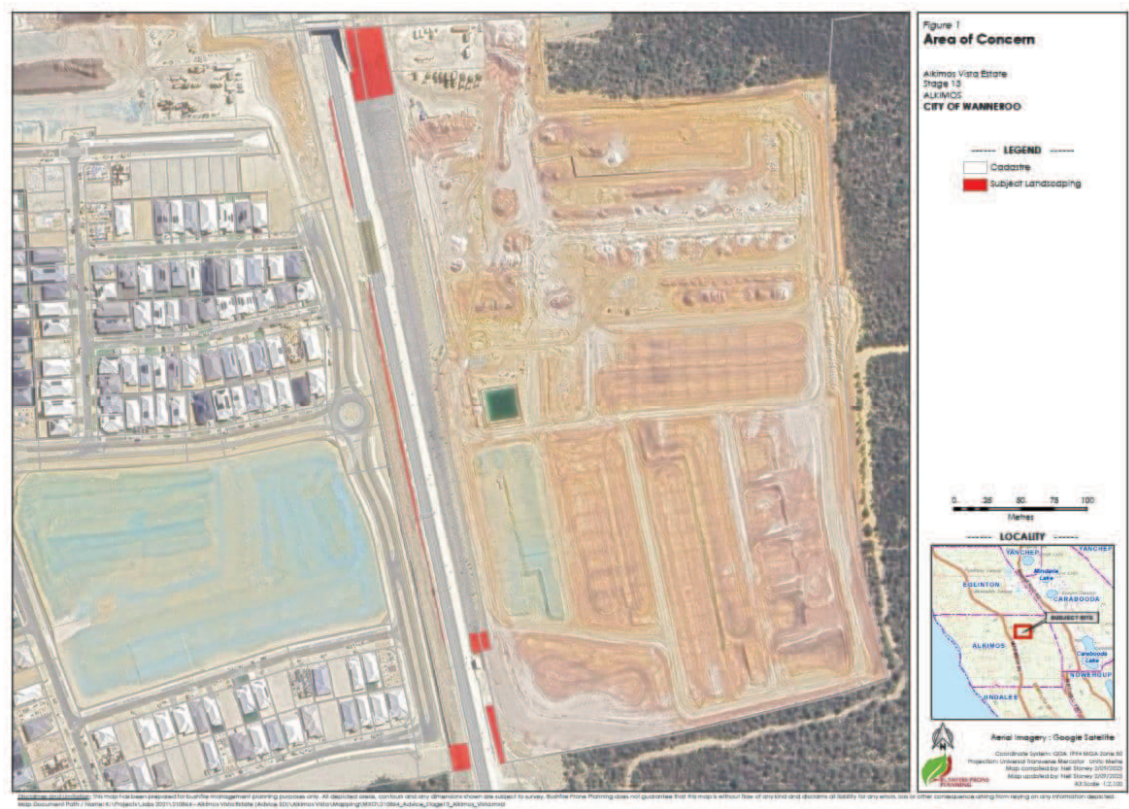
Development WA acceptance:

Approver name and role

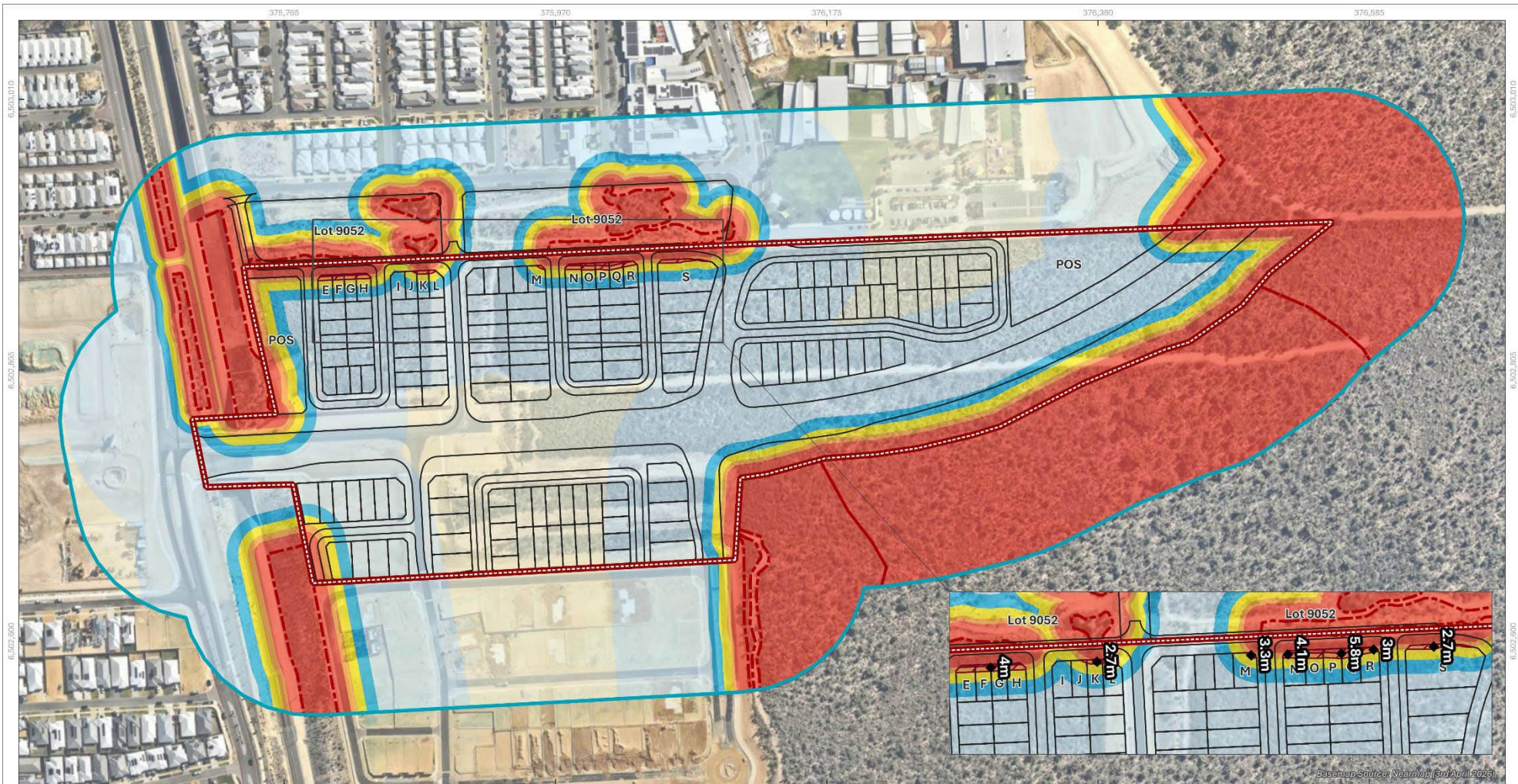
Date

Purchase Order Number

Attachment 1 – Subject landscaping



Appendix B: Bushfire Attack Level Contours - Worst Case



Appendix B: Bushfire Attack Level (BAL) Contours (worst-case)

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- Subject Site
- Buffer 100m
- Lot boundary
- Building Exclusion Zone
- Bushfire hazard interface

Bushfire Attack Level (BAL)

- BAL-FZ
- BAL-40
- BAL-29
- BAL-19
- BAL-12.5
- BAL-LOW



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0 30 60 90 120 m

COORDINATE REFERENCE SYSTEM:
GDA2020 / MGA Zone 50

SCALE: 1:4,100 PROJECT NUMBER:
A24.278

DRAWN BY / REVIEWED BY:
SM / BE 3/7/2026



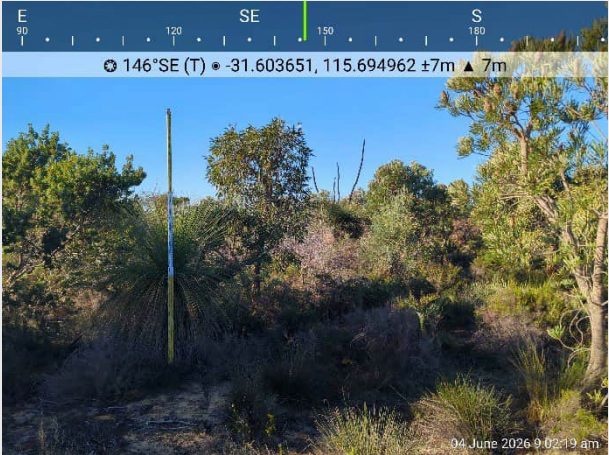
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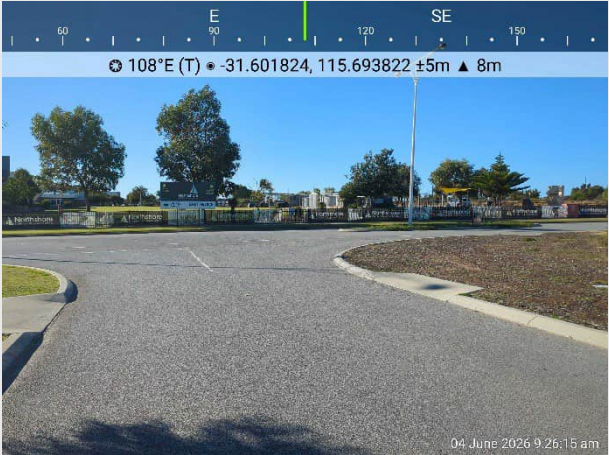
Appendix C:

Classified Vegetation Photos

Plot 1	Class C Shrubland
Photo 1 Planted shrubs less than 2 m in height at maturity and a foliage cover exceeding 30% of the mapped extent. The slope under this vegetation was assessed to be downslope >15 to 20 degrees. This photo depicts an area that will be subject to future low threat landscaping, including the removal of ‘high risk plant species’ (Refer to Appendix A).	
Plot 1	Class C Shrubland
Photo 2 Planted shrubs less than 2 m in height at maturity and a foliage cover exceeding 30% of the mapped extent. The slope under this vegetation was assessed to be downslope >15 to 20 degrees.	
Plot 2	Class C Shrubland
Planted shrubs less than 2 m in height at maturity and a foliage cover exceeding 30% of the mapped extent. This vegetation occurred on the rail corridor batter approximately 50 m west of the subject site. A photograph could not be obtained due to its placement between Alkimos Drive and the railway line. The associated BAL contours are considered redundant, as Class C Shrubland on downslope >15 to 20 degrees is closer to the subject site and imposes higher BAL ratings. The slope under this vegetation was assessed to be upslope/flat land.	No photo captured due to site access constraints.

Plot 3	Class D Scrub
Photo 3 Dense shrubs predominantly ranging from 2 – 6 m in height. Foliage cover in the mapped extent exceeds 30%. This plot contained the occasional isolated tree. The trees were found to be too sparse to alter the overall fire behaviour in the event of a bushfire or warrant a change in vegetation classification. The slope under this vegetation was assessed to be downslope >0 to 5 degrees.	
Plot 3	Class D Scrub
Photo 4 Dense shrubs predominantly ranging from 2 – 6 m in height. Foliage cover in the mapped extent exceeds 30%. This plot contained the occasional isolated tree. The trees were found to be too sparse to alter the overall fire behaviour in the event of a bushfire or warrant a change in vegetation classification. The slope under this vegetation was assessed to be downslope >0 to 5 degrees.	
Plot 4	Class D Scrub
Photo 5 Dense shrubs predominantly ranging from 2 – 6 m in height. Foliage cover in the mapped extent exceeds 30%. Common genus observed in this plot included Xanthorrhoea, Acacia, and Banksia. The slope under this vegetation was assessed to be upslope/flat land.	

Plot 4	Class D Scrub
Photo 6 Dense shrubs predominantly ranging from 2 – 6 m in height. Foliage cover in the mapped extent exceeds 30%. Common genus observed in this plot included Xanthorrhoea, Acacia, and Banksia. The slope under this vegetation was assessed to be upslope/flat land.	
Plot 4	Class D Scrub
Photo 7 Dense shrubs predominantly ranging from 2 – 6 m in height. Foliage cover in the mapped extent exceeds 30%. Common genus observed in this plot included Xanthorrhoea, Acacia, and Banksia. The height staff in the photo is extended to a height of 3 m for reference. The slope under this vegetation was assessed to be upslope/flat land.	
Plot 4	Class D Scrub
Photo 8 Dense shrubs predominantly ranging from 2 – 6 m in height. Foliage cover in the mapped extent exceeds 30%. Common genus observed in this plot included Xanthorrhoea, Acacia, and Banksia. This photo depicts vegetation in the neighbouring lot located north of the subject site. The lot showed signs of having recently been cleared, with predominantly patchy and juvenile plants present. The slope under this vegetation was assessed to be upslope/flat land.	

Plot 5	Excluded - clause 2.2.3.2 (e)
Photo 9 Roads and cleared land subject to earthworks ahead of development for residential housing. These non-vegetated areas have been excluded in accordance with Clause 2.2.3.2 (e) of AS 3959: 2018.	 04 June 2026 9:35:29 am
Plot 5	Excluded - clause 2.2.3.2 (e)
Photo 10 Roads, footpaths, and road verges containing coarse woody mulch and other non-combustible materials. These non-vegetated areas have been excluded in accordance with Clause 2.2.3.2 (e) of AS 3959: 2018.	 04 June 2026 9:26:15 am
Plot 6	Excluded - clause 2.2.3.2 (e)
Photo 11 Unsealed car park formed from compacted earth and devoid of vegetation. These non-vegetated areas have been excluded in accordance with Clause 2.2.3.2 (e) of AS 3959: 2018.	 04 June 2026 9:40:13 am

Plot 6	Excluded - clause 2.2.3.2 (f)
Photo 12 Northshore Christian Grammar School Oval. The grass shown in this photo was well maintained and cropped to a height <100 mm. This vegetation is regarded as low-threat and has been excluded in accordance with Clause 2.2.3.2 (f) of AS 3959:2018.	
Plot 6	Excluded - clause 2.2.3.2 (f)
Photo 13 (Background) Northshore Christian Grammar School Oval eastern gardens. The gardens were comprised of mostly groundcovers <500 mm in height, with a coarse woody mulch base. This vegetation is regarded as low-threat and has been excluded in accordance with Clause 2.2.3.2 (f) of AS 3959:2018.	

Appendix D:

Vehicular Access Technical Requirements (WAPC, 2024b)

Technical requirements		Perimeter Roads		Public Roads		Emergency Access Way3		Fire Service Access Route3		Battle-Axe and Private Driveways1	
Map of Bush Fire Prone Areas Designation		Area 2	Area 1	Area 2	Area 1	Area 2	Area 1	Area 2	Area 1	Area 2	Area 1
Minimum horizontal clearance (m)		12	8	See note 5		10	6	10	6	6	
Minimum vertical clearance (m)		4.5									
Minimum weight capacity (t)		15									
Maximum grade unsealed road2		See note 5				1:10 (10% or 6 degrees)					
Maximum grade sealed road2, 4						1:7 (14.3% or 8 degrees)					
Maximum average grade sealed road						1:10 (10% or 6 degrees)					
Minimum inner radius of road curves (m)						8.5					

NOTES

1. Driveways and battle-axe legs to comply with the Residential Design Codes and Development Control Policy 2.2 Residential Subdivision where not required to comply with the widths in this Appendix or the Guidelines.
2. Dips must have no more than a 1 in 8 (12.5% - 7.1 degrees) entry and exit angle.
3. To have crossfalls between 3 per cent and 6 per cent.
4. For sealed roads only the maximum grade of no more than 1 in 5 (20 per cent) (11.3 degrees) for no more than 50 metres is permissible, except for short constrictions to 3.5 metres for no more than 30 metres in length where an obstruction cannot be reasonably avoided or removed.
5. As outlined in the Institute of Public Works Engineering Australasia (IPWEA) subdivision guidelines, Liveable Neighbourhoods, Austroads Standards Main Roads standard, supplement, policy or guideline and/or any applicable or relevant local government standard or policy.



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