

Golden Gateway Structure Plan

Bushfire Management Plan

Prepared for City of Belmont

By Urbaqua

June 2018

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EXECUTIVE SUMMARY

This bushfire management plan has been undertaken to support structure planning for the Golden Gateway Precinct in the City of Belmont (Figure 1).

A small portion of the subject land is identified as a bush fire prone area, designated by the Fire and Emergency Services (FES) Commissioner. This report has been prepared to meet the requirements of *State Planning Policy 3.7: Planning in Bushfire Prone Areas* (SPP 3.7) (2015) and the *Guidelines for Planning in Bushfire Prone Areas*, Version 1.1 (WAPC, 2017).

This plan provides advice consistent with the nature of a strategic proposal. Details in this report are consistent with *State Planning Policy 3.7: Planning for Bushfire Prone Areas* (WAPC, 2015) and the *Guidelines for Planning in Bush Fire Prone Areas* and associated appendices (V1.3, WAPC, 2017).

A vegetation class assessment was conducted for the subject land and adjacent areas for a minimum of 150 metres. As the road and lot layout is known, a bushfire attack level (BAL) assessment was undertaken and a BAL contour plan has been developed to show the indicative future BALs. This information may be used to guide the future development of the site, consistent with *AS3959 Construction of buildings in Bushfire Prone Areas*.

Bushfire risk to the areas proposed for future development is BAL-LOW. There is insufficient risk to warrant specific construction requirements.

The bushfire mitigation and management strategies outlined in this management plan comply with the acceptable solutions of control for each of the Bushfire Protection Criteria detailed in *Guidelines for Planning in Bushfire Prone Areas* (2017).

It is therefore considered that this bushfire management plan demonstrates compliance with the objectives and provisions of *State Planning Policy 3.7: Planning in Bushfire Prone Areas*.

This bushfire management plan is to be endorsed by the City of Belmont and is required to be reviewed and updated where necessary.

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1 INTRODUCTION

The City of Belmont has engaged Urbaqua to prepare a Bushfire management plan to support preparation of a local structure plan for the Golden Gateway project area (Figure 1) in the City of Belmont (Figure 2).

A portion of the subject land is identified as a bush fire prone area, designated by the Fire and Emergency Services (FES) Commissioner (Figure 3). This report has been prepared to meet the requirements of *State Planning Policy 3.7: Planning in Bushfire Prone Areas* (SPP 3.7) (2015) and the *Guidelines for Planning in Bushfire Prone Areas* (V1.3, WAPC, 2017).

Any identified bushfire risk will be addressed as part of the future development approvals process, consistent with the requirements of *State Planning Policy 3.7: Planning in Bushfire Prone Areas* (SPP 3.7) (2015), the Building Code of Australia and *Australian Standards (AS3959-2009): Construction of buildings in bushfire prone area* where these apply.

1.1 Proposal details

The subject land consists of approximately 31.8 hectares of land in the vicinity of Great Eastern Hwy, Resolution Dr, Grandstand Rd and Stoneham St in Ascot.

The Golden Gateway Precinct includes a large portion of 'Mixed use' land, which encompasses the historical Ascot's Bristle beehive kilns and chimney stacks and portions of the Ascot Racecourse. The precinct also contains approximately 5.3 ha of Parks and Recreation reserve which covers Belmont Trust Land. There is also a small portion of Parks and Recreation: water supply sewerage and drainage reserve, which is under the control of the Water Corporation.

The Golden Gateway Precinct will provide for a diverse range of land uses. The primary land use within the Structure Plan area is residential, supplemented by commercial uses and local open space

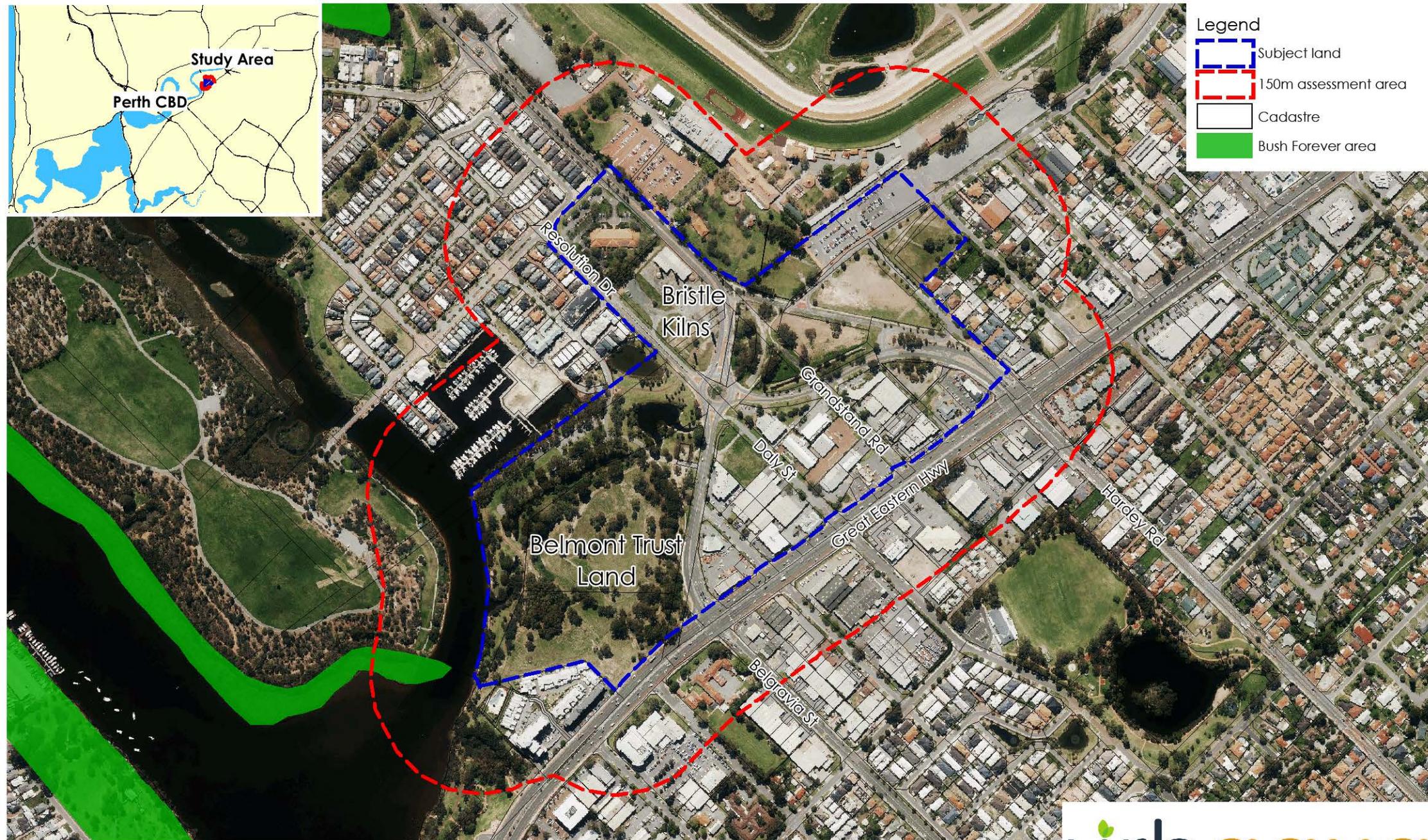
1.1.1 Planning background

The majority of the study area is zoned 'Urban' under the Metropolitan Region Scheme, with a portion zoned for 'Mixed use' and reserved for 'Parks and Recreation' under City of Belmont Local Planning Scheme No. 15.



Figure 1: Development concept plan and proposed zoning (Source: TBB)

Figure 2: Subject land



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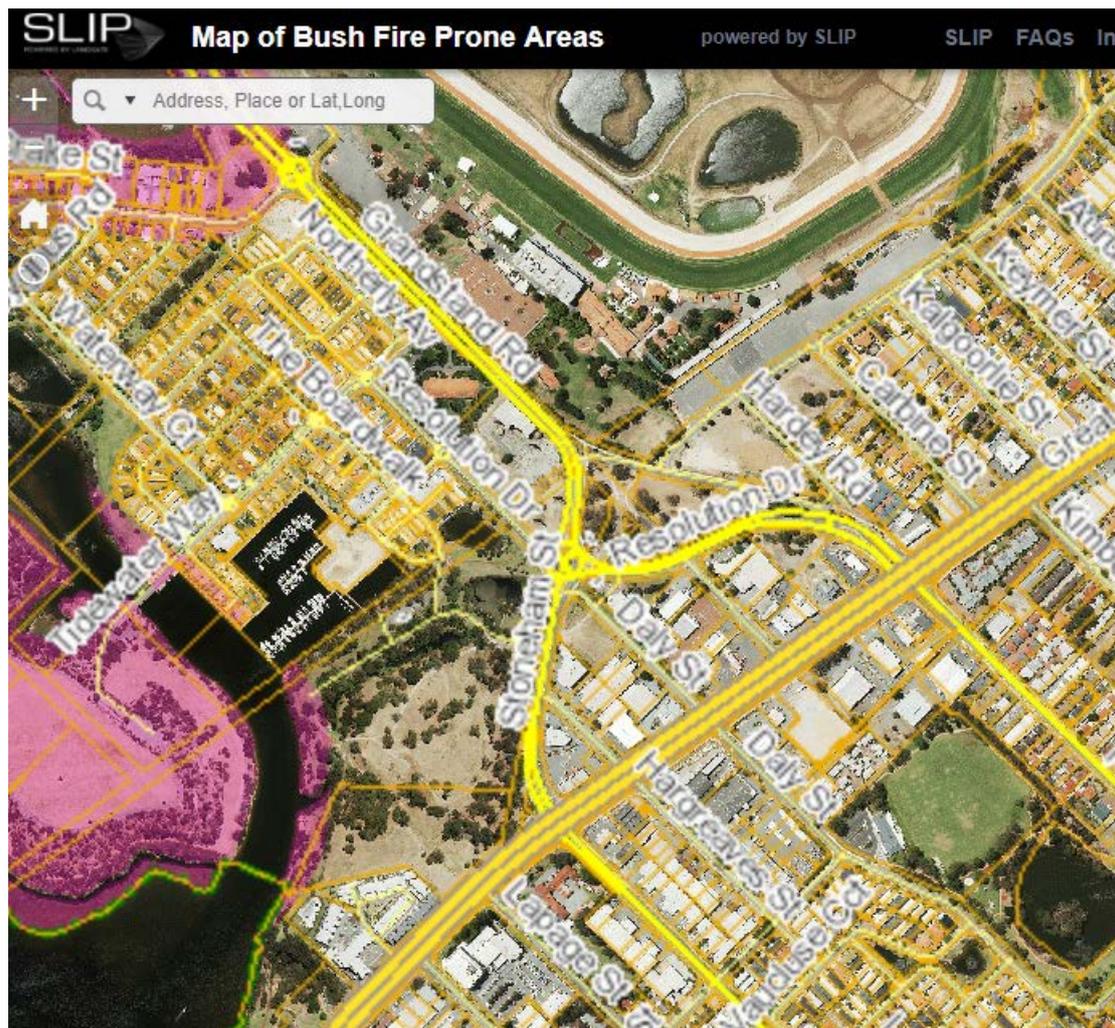


Figure 3: Map of Bushfire Prone Areas for the subject site (Source: DFES, 2018)

1.2 Bushfire management guidelines, specifications and minimum standards

Specifications or standards relevant to this bushfire management plan are derived from and consistent with:

- *Fire and Emergency Services Act 1998*
- *Bush Fires Act 1954*
- *Planning and Development (local planning Scheme amendment) Regulations 2015*
- *State Planning Policy 3.7: Planning in Bushfire Prone Areas (WAPC, 2015);*
- *Guidelines for Planning for Bushfire Prone Areas and appendices, Version 1.3 (WAPC, 2017)*
- *Australian Standards (AS3959-2009): Construction of buildings in bushfire prone areas;* and
- *City of Belmont Fire Break Notice 2017-2018.*

2 ENVIRONMENTAL CONSIDERATIONS

The subject land has been used predominantly for commercial purposes for over 50 years. The Golden Gateway Precinct includes the historical Ascot's Bristle beehive kilns and chimney stacks and portions of the Ascot Racecourse. The subject land also contains a large proportion of managed parkland which borders the Swan River. The Belmont Trust Land in the western portion of the study area was historically used for sporting purposes such as baseball fields and is now maintained as parkland by the City. There are no significant environmental values located within the subject land.

Bush Forever site 313, Swan River Salt Marshes is located within the 150m assessment area. This area is separated from the subject land by the Swan River, which is approximately 70m wide at this point. The remaining areas within 150m of the subject land have no significant environmental values. They include Ascot Racecourse, Belmont Park Primary school, residential housing and commercial areas.

2.1 Native Vegetation – modification and clearing

The vegetation in the study area has been highly modified. Although mature trees remain in many parts of the subject land, the undergrowth has been cleared and is maintained in a modified landscaped, parkland state.

Although the grassland which covers the Belmont Trust land is managed and maintained by the City of Belmont, a small portion of regrowth exists where the tree trunks are too close together to permit mowing. This land is proposed to be developed in the future, although the development concept is not yet known. The City will continue to maintain the Belmont Trust Land in a low fire hazard state.

Some bushfire risk exists as a result of vegetation within and adjacent to Bush Forever Area 313 (Swan River Salt Marshes) located to the north west of the subject land. This vegetation is separated from the subject land; however, by a branch of the Swan River. It is also noted that the majority of vegetation on the island is maintained in a low fuel state. Where shrubs and trees exist, there is no understory and the fine fuel load is less than 2tonnes/ha.



Plate 1: Fine fuel load less than 2 tonnes/ha on the island adjacent the subject land

Vegetation also exists around a drain on the south-western side of the Ascot Quays Apartment Hotel. This vegetation is outside the subject land but within 150m of the structure plan area. The

vegetation is less than 20m in width on each side of the drain and the understory is managed (irrigated) grassland. This vegetation is not considered to represent a bushfire hazard.

2.2 Re-vegetation/Landscape Plans

No revegetation is proposed within the subject land.

Some landscaping of road reserves, open space and car parks is proposed. This will consist of individual trees without understory or managed parkland and as such is not considered to have the potential to create a fire hazard.

3 BUSHFIRE ASSESSMENT RESULTS

3.1 Assessment Inputs

In order to identify the potential bushfire risks, it is necessary to describe the bushfire problem associated with the subject land. The assessment takes into consideration the:

- the topography and slope of the subject land;
- type and classification of vegetation present on and adjacent to the subject land;
- distances between the classifiable vegetation; and
- current and proposed future land use.

3.1.1 Slope

The study area has generally flat topography and grades gently from 6mAHD in the south-east to 3mAHD in the west. The study area has a few low points of approximately 1-2mAHD through the centre of the study area, as shown in Figure 4.

The effective slope (that is the slope that will affect the behaviour of an approaching bushfire) underneath the vegetation across the River to the west is upslope.

Slope is therefore not considered to be a factor in terms of increasing bushfire hazard.

3.1.2 Current and future land use

The subject land comprises four key precincts:

- The area bounded by Great Eastern Highway, Stoneham Street and Resolution Drive is characterised by predominately mixed business development and small pockets of retail (food and beverage) uses along Great Eastern Highway;
- The western portion of the subject land encompassing the Belmont Trust Land (Grove Farm Reserve) is previously cleared with large mature trees sparsely located around the reserve. Grove Farm Reserve was historically used for recreation purposes, specifically a baseball field;
- The northern portion of the subject land is partially developed with the WA Turf Club Headquarters and Ascot kilns and chimney stacks; and
- The remainder of the subject land within the north-eastern corner is largely undeveloped and comprises a number of existing road reserves and WA Turf Club owned land used for overflow parking on racing event days.

The Golden Gateway Precinct will provide for a diverse range of land uses. The primary land use within the Structure Plan area is residential, supplemented by commercial uses and local open space.

3.1.3 Vegetation types

On the basis of a site visit on 13 March 2018, vegetation at the site and within 150m was assessed. Vegetation within 100m was classified according to the descriptions provided in AS 3959 – 2009, and includes the following three vegetation types:

- Class B Woodland – Low woodland (B7): Low trees and shrubs 2-10m high; foliage cover less than 10%. Dominated by eucalypts and Acacias. Often have a grassy understorey or low shrubs. Acacias and Casuarina woodlands grade to Atriplex shrublands in the arid and semi-arid zones.
- Low threat vegetation – AS3959 2.2.3.2(b) - Single area of vegetation less than 1ha and not within 100m of other areas of vegetation being classified.
- Low threat vegetation – AS3959 2.2.3.2(f) - grassland managed in a minimal fuel condition, maintained lawns, golf courses, maintained public reserves and parklands, vineyards, orchards, cultivated gardens, commercial nurseries, nature strips and windbreaks.

The vegetation within the subject land and 150m surrounding is shown in Table 1 and Figure 4.

Table 1: Vegetation classification

Photo point	Vegetation class	Vegetation type	Description	
1 Plot 1		Low Threat Exclusion Clause 2.2.3.2 (f)	Ascot Racecourse	Grassland managed in a minimal fuel condition, maintained lawns, golf courses, maintained public reserves and parklands, vineyards, orchards, cultivated gardens, commercial nurseries, nature strips and windbreaks
2 Plot 2		Low Threat Exclusion Clause 2.2.3.2 (f)	Ascot Racecourse	Grassland managed in a minimal fuel condition, maintained lawns, golf courses, maintained public reserves and parklands, vineyards, orchards, cultivated gardens, commercial nurseries, nature strips and windbreaks
3 Plot 3		Low Threat Exclusion Clause 2.2.3.2 (f)	Managed parkland	Grassland managed in a minimal fuel condition, maintained lawns, golf courses, maintained public reserves and parklands, vineyards, orchards, cultivated gardens, commercial nurseries, nature strips and windbreaks

Photo point	Vegetation class	Vegetation type	Description
4 Plot 3	Low Threat Exclusion Clause 2.2.3.2 (f)	Managed parkland	Grassland managed in a minimal fuel condition, maintained lawns, golf courses, maintained public reserves and parklands, vineyards, orchards, cultivated gardens, commercial nurseries, nature strips and windbreaks
5 Plot 3	Low Threat Exclusion Clause 2.2.3.2 (f)	Managed parkland	Grassland managed in a minimal fuel condition, maintained lawns, golf courses, maintained public reserves and parklands, vineyards, orchards, cultivated gardens, commercial nurseries, nature strips and windbreaks
6 Plot 4	Low Threat Exclusion Clause 2.2.3.2 (f)	Public reserve maintained in low threat state	Grassland managed in a minimal fuel condition, maintained lawns, golf courses, maintained public reserves and parklands, vineyards, orchards, cultivated gardens, commercial nurseries, nature strips and windbreaks
7 Plot 4	Low Threat Exclusion Clause 2.2.3.2 (f)		Grassland managed in a minimal fuel condition, maintained lawns, golf courses, maintained public reserves and parklands, vineyards, orchards, cultivated gardens, commercial nurseries, nature strips and windbreaks

Photo point		Vegetation class	Vegetation type	Description
8 Plot 8		Low Threat Exclusion Clause 2.2.3.2(b)	Regrowth	Single area of vegetation less than 1ha and not within 100m of other areas of vegetation being classified
9 Plot 5		Class B: Woodland	B07 - Low Woodland	Low trees and shrubs 2-10m high; foliage cover less than 10%. Dominated by eucalypts and Acacias. Often have a grassy understorey or low shrubs. Acacias and Casuarina woodlands grade to Atriplex shrublands in the arid and semi-arid zones.
10 Plot 6		Low Threat Exclusion Clause 2.2.3.2 (f)	Drain	Grassland managed in a minimal fuel condition, maintained lawns, golf courses, maintained public reserves and parklands, vineyards, orchards, cultivated gardens, commercial nurseries, nature strips and windbreaks
11 Plot 6		Low Threat Exclusion Clause 2.2.3.2 (f)	Managed parkland	Grassland managed in a minimal fuel condition, maintained lawns, golf courses, maintained public reserves and parklands, vineyards, orchards, cultivated gardens, commercial nurseries, nature strips and windbreaks

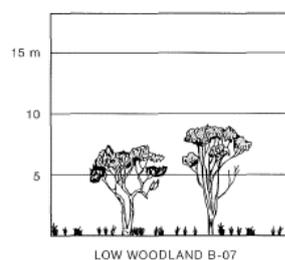


Photo point		Vegetation class	Vegetation type	Description
12 Plot 7		Low Threat Exclusion Clause 2.2.3.2 (f)	Commercial office landscaping	Grassland managed in a minimal fuel condition, maintained lawns, golf courses, maintained public reserves and parklands, vineyards, orchards, cultivated gardens, commercial nurseries, nature strips and windbreaks
13 Plot 8		Low Threat Exclusion Clause 2.2.3.2 (f)	Primary school	Grassland managed in a minimal fuel condition, maintained lawns, golf courses, maintained public reserves and parklands, vineyards, orchards, cultivated gardens, commercial nurseries, nature strips and windbreaks

3.2 Assessment outputs

Consistent with Appendix Two of the *Guidelines for Planning in Bushfire Prone Areas* (V1.3, WAPC, 2017), as this bushfire management plan is to support an application where the indicative development footprint is known, a Bushfire Attack Level (BAL) assessment has been undertaken in accordance with Method 1 of AS3959: Construction of buildings in bushfire prone areas. Table 2 provides a summary of the assessment.

Table 2: BAL assessment summary

Plot	Vegetation Classification	Effective Slope	Separation Distance to the Classified Vegetation (m)	Hazard Level
6	Woodland (B)	Upslope	70m to the edge of the Parks and Recreation Reserve and 108m to the edge of the proposed development area (Belmont Trust Land)	BAL-LOW

A BAL contour map has been created for the proposed development which shows indicative BAL ratings for the site (Figure 5) consistent with Appendix 3 of the *Guidelines for Planning in Bushfire Prone Areas* (V1.3, WAPC, 2017). The BAL contour map was prepared on the basis of FDI 80; the vegetation classification shown in Table 1; and slope shown on Figure 4. An excerpt from AS3959 is provided in Table 3.

Table 3: Excerpt from AS 3959, Table 2.4.3, Distance (m) of the site from the predominant vegetation class

FDI 80 (1090 K)	Vegetation classification and slope
Bushfire attack levels (BALs)	Class B: Woodland - Upslope and flat land
BAL-FZ	<10 m
BAL-40	10-<14
BAL-29	14-<20
BAL-19	20-<29
BAL-12.5	29-<100
BAL-LOW	Beyond 100m

Figure 4: Post-development vegetation classification



Legend

- Subject land
- 150m assessment area
- Cadastre

Vegetation classification

- Class B: Woodland
- Low threat: Exclusion 2.2.3.2(f)
- Low threat: Exclusion 2.2.3.2(b)

Photo points and direction

-

Topography - 1 m contours (mAHD)

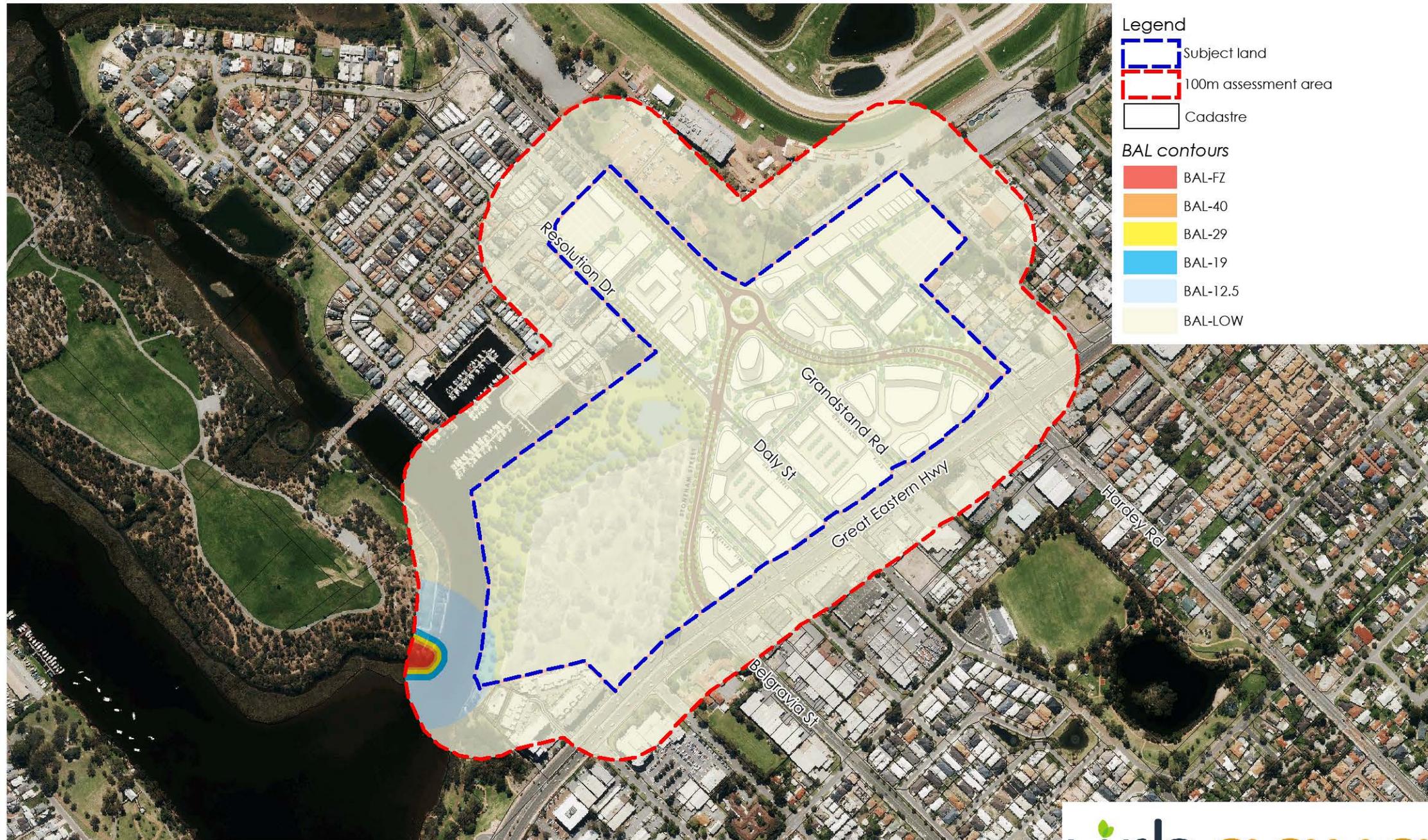
- 10 - 11 m
- 9 - 10 m
- 8 - 9 m
- 7 - 8 m
- 6 - 7 m
- 5 - 6 m
- 4 - 5 m
- 3 - 4 m
- 2 - 3 m
- 0 - 2 m

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Scale 1: 7,000 @ A4



Figure 5: BAL contour map



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Scale 1: 7,000 @ A4

0 140 m



4 IDENTIFICATION OF BUSHFIRE HAZARD ISSUES

The subject land is adjacent to an area of vegetation which has the potential to create a bushfire risk.

It is considered that the bushfire risk to the proposed development can be adequately managed through appropriate location and siting and design of development, as well as necessary vehicular access and water supply which will be provided to the development.

Bushfire hazard to the proposed development is therefore considered to be low. This conclusion is substantiated further below.

4.1 Location

After development, the subject land will not contain any vegetation that is considered to be a bushfire hazard.

Although fire risk exists from vegetation adjacent to the subject land, the subject land is not subject to BAL-40 or BAL-FZ and therefore this proposal does not result in the intensification of any development in areas that are subject to extreme hazard.

4.2 Siting and design of development

Bushfire risk from vegetation outside the subject land is likely to remain as this vegetation is associated with significant environmental values (Bush Forever Site 313). It is noted that the Swan River establishes sufficient separation between the bushfire hazard and the edge of subject land to achieve BAL ratings of BAL-12.5 and less, consistent with Method 1 of AS3959. It is noted that the public open space reserve provides a further separation such that the land to be developed in the future (the Belmont Trust Land) is rated at BAL-LOW.

As no proposed areas of development will be subject to BAL-40 or BAL-FZ, it is considered that development has been sited to avoid areas of extreme bushfire risk. All habitable dwellings will be constructed to meet the requirements of AS3959 *Construction of buildings in Bushfire Prone Areas* where necessary.

4.3 Vehicular access

The subject site is afforded excellent access from an integrated regional (existing and future) road network. The subject land is bounded by Great Eastern Highway to the south which provides access to the west towards the Perth CBD, Graham Farmer Freeway and onto South Perth, Melville and Fremantle via Canning Highway. To the east, Great Eastern Highway provides access to Perth Airport, Tonkin/Roe Highway and onto Guildford, Midland and the Swan Valley. These networks provide excellent access to and egress from the subject land.

The proposed local road network provides for at least two different access and egress routes to the proposed residential and commercial areas. The localised road network includes a network of local distributor and access roads providing access to key regional and district roads such as Great Eastern Highway and the Garret Road bridge which include Grandstand Road, Resolution Drive and Stoneham Street.

All roads and transport infrastructure will be designed and constructed to meet the requirements of the *Guidelines for Planning in Bushfire Prone Areas* (Version 1.3 WAPC, 2017) Appendix Four, Table 4, as replicated in Table 4 below.

Table 4: Vehicular access technical requirements (WAPC, 2017)

Technical Requirement	Public road	Cul-de-sac	Private driveway	Emergency access way	Fire service access routes
Minimum trafficable surface (m)	6	6	4	6	6
Horizontal clearance (m)	6	6	6	6	6
Vertical clearance (m)	4	N/A	4.5	4.5	4.5
Maximum grade over <50m	1 in 10	1 in 10	1 in 10	1 in 10	1 in 10
Minimum weight capacity (t)	15	15	15	15	15
Maximum cross fall	1 in 33	1 in 33	1 in 33	1 in 33	1 in 33
Curves minimum inner radius (m)	8.5	8.5	8.5	8.5	8.5
Additional specialist requirements					

4.4 Water

The proposed development is currently serviced by a reticulated water supply, together with fire hydrants, in accordance with the specifications of the Water Corporation and Department of Fire and Emergency Services (DFES).

Contractors or others carrying out building or other works at the site must not cover hydrants and/or the markings indicating their location. In the event activities occur that do result in hydrants or markings being covered, damaged, or removed, it will be the responsibility of the relevant contractor to rectify the situation.

5 ASSESSMENT AGAINST THE BUSHFIRE PROTECTION CRITERIA

The subject land is adjacent to an area of bushfire risk. Bushfire risk mitigation and management measures have been identified to reduce bushfire risk to achieve the objectives of SPP3.7, as previously outlined in Section 3.

The bushfire risk mitigation strategies proposed comply with the acceptable solutions for each of the Bushfire Protection Criteria detailed in *Guidelines for Planning in Bushfire Prone Areas* (2017). They are summarised in Table 5.

5.1 Compliance Table

Table 5: Bushfire protection criteria assessment

Element	Acceptable solution	Compliance
1. Location	A1.1 Development location	<input checked="" type="checkbox"/> No development is proposed in areas subject to BAL-40 or BAL-FZ.
2. Siting and design of development	A2.2 Asset Protection Zone	<input checked="" type="checkbox"/> No development will be subject to BAL-40 or BAL-FZ. Habitable buildings will be constructed in accordance with AS3959.
3. Vehicular Access	A3.1 Two access routes	<input checked="" type="checkbox"/> Short and long term public access is provided which ensures a minimum 2 access routes are provided at all times.
	A3.2 Public road	<input checked="" type="checkbox"/> All public roads meet the requirements of Table 4 of Appendix 4 of the Guidelines for Planning in Bushfire Prone Areas (WAPC, 2017)
	A3.3 Cul-de-sac	<input checked="" type="checkbox"/> N/A – no cul-de-sacs are proposed.
	A3.4 Battle-axe	<input checked="" type="checkbox"/> N/A - No battle-axe lots are proposed.
	A3.5 Private driveway longer than 50m	<input checked="" type="checkbox"/> N/A - No lots have driveways greater than 50m in length.
	A3.6 Emergency access way	<input checked="" type="checkbox"/> N/A – No emergency access ways are proposed
	A3.7 Fire service access routes	<input checked="" type="checkbox"/> The existing road network provides appropriate fire service access routes.
	A3.8 Firebreak widths	<input checked="" type="checkbox"/> N/A
4. Water	A4.1 Reticulated areas	<input checked="" type="checkbox"/> The development is currently serviced by reticulated water and fire hydrants which meet Water Corporation and DFES specifications
	A4.2 Non-reticulated areas	<input checked="" type="checkbox"/> N/A
	A4.3 Individual lots within non-reticulated areas	<input checked="" type="checkbox"/> N/A

5.2 Bushfire management strategies

As the area proposed for development is greater than 100m from any classifiable vegetation (due to the presence of the Parks and Recreation Reserve), no bushfire management strategies are considered necessary.

There is insufficient risk to warrant specific construction requirements.

It is noted that any new roads will be constructed to meet Main Roads and Local Government requirements and that water and hydrants are provided to DFES and Water Corporation standards.

5.3 Certification by Bushfire Consultant

I, Shelley Shepherd, certify that at the time of inspection, the BAL ratings contained within this BMP are correct.

The Bushfire Attack Level to the proposed development area is BAL-LOW. There is insufficient risk to warrant specific construction requirements and no specific management actions are required to mitigate bushfire risk to the proposed development area.

Signature:  Date: 2 May 2018



Client: City of Belmont

Report	Version	Prepared by	Reviewed by	Submitted to Client	
				Copies	Date
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