

FIRE MANAGEMENT PLAN

Lot 2 Pipidinny Road

North Eglinton Estate

City of Wanneroo



FirePlan WA

November 2013

Revised October 2015

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Fire Management Plan Lot 2 Pipidiny Road – North Eglinton Estate.

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Version 4	Amendment to Structure Plan		28.11.13
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Version 6	Amendment to Staging Plan Stages 3-9		30.10.15

Disclaimer: The measures contained in this fire management plan are considered to be minimum standards and they do not guarantee that a building will not be damaged in a bush fire. All surveys, forecasts, projections and recommendations made in this report associated with the project are made in good faith on the basis of information available to FirePlan WA at the time; and achievement of the level of implementation of fire precautions will depend among other things on the actions of the landowners or occupiers over which FirePlan WA has no control. Notwithstanding anything contained therein, FirePlan WA will not, except as the law may require, be liable for any loss or other consequences (whether or not due to the negligence of the consultants, their servants or agents) arising out of the services rendered by the consultants.

1.0 INTRODUCTION

The purpose of this Bushfire Management Plan is to detail the fire management methods and requirements that will be implemented for Lot 2 Pipidinny Road North Eglinton Estate, refer Figure 1.

This area is predominantly Shrubland vegetation with a Bush Forever site along the northern boundary. The development will consist of urban residential housing, neighbourhood centre, Primary School site, high School site, community garden and sporting ovals and public open space areas. The area except for some areas of Public Open Space (POS) will be cleared. Refer to Figure 2.

This fire management plan complies with the acceptable solutions detailed in Appendix 2 of Planning for Bush Fire Protection and are summarised in Compliance Checklist for Performance Criteria and Acceptable Solutions at the end of this fire management plan Section 8.

This Fire Management Plan will likewise outline the responsibility and timing for implementing and maintaining the fire protection measures and strategies contained within, allocating these responsibilities between individual land owners, the developers and the City of Wanneroo.

As fire management strategies may require altering to meet changing weather, environment and land use needs, it must be advised that the provisions of the *Bush Fires Act 1954* will still be enforced, in addition to this Fire Management Plan.

The City of Wanneroo will be responsible for initiating a review of this fire management plan as it may seem necessary to do so.

In the event of large bushfires it is essential that landowners understand that fire appliances may not be available to protect each dwelling.

The City of Wanneroo requires the preparation of a 'Fire Management Plan' for the proposed development to support the Concept Local Structure Plan. This document has been prepared to satisfy that requirement and may be amended as part of the Planning process.

This Fire Management Plan has been prepared in accordance with Acceptable Solutions detailed in *Planning for Bush Fire Protection* Edition 2 (2010). There has been consultation between the FirePlan WA and the City of Wanneroo Fire Officer in the preparation of this Fire Management Plan.

The original Fire Management Plan dated November 2013 has been revised to take into account the changes to layout to Stages 3-9 which are included in this Fire Management Plan.

Figure 1 Locality Map

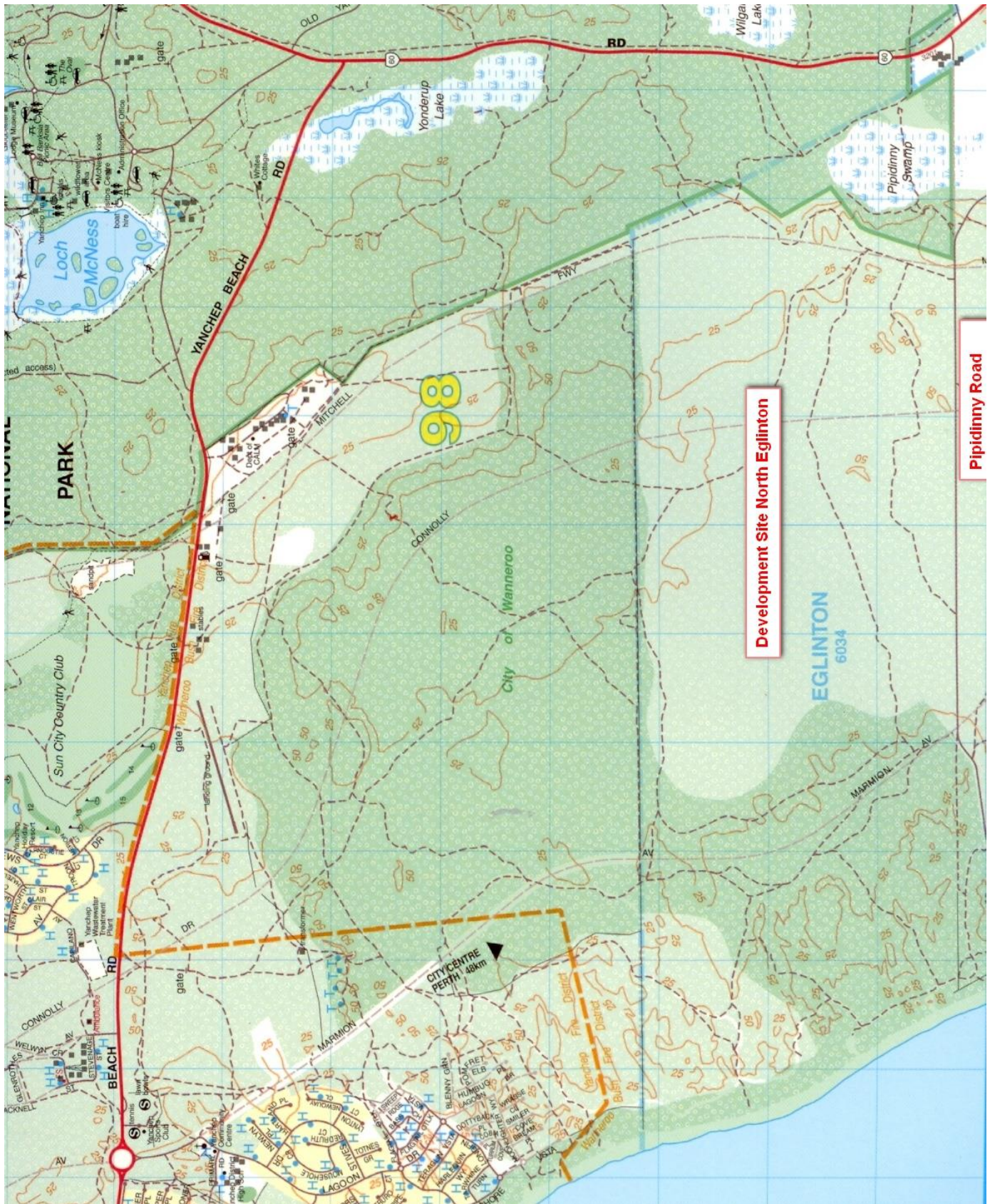


Figure 2 Structure Plan

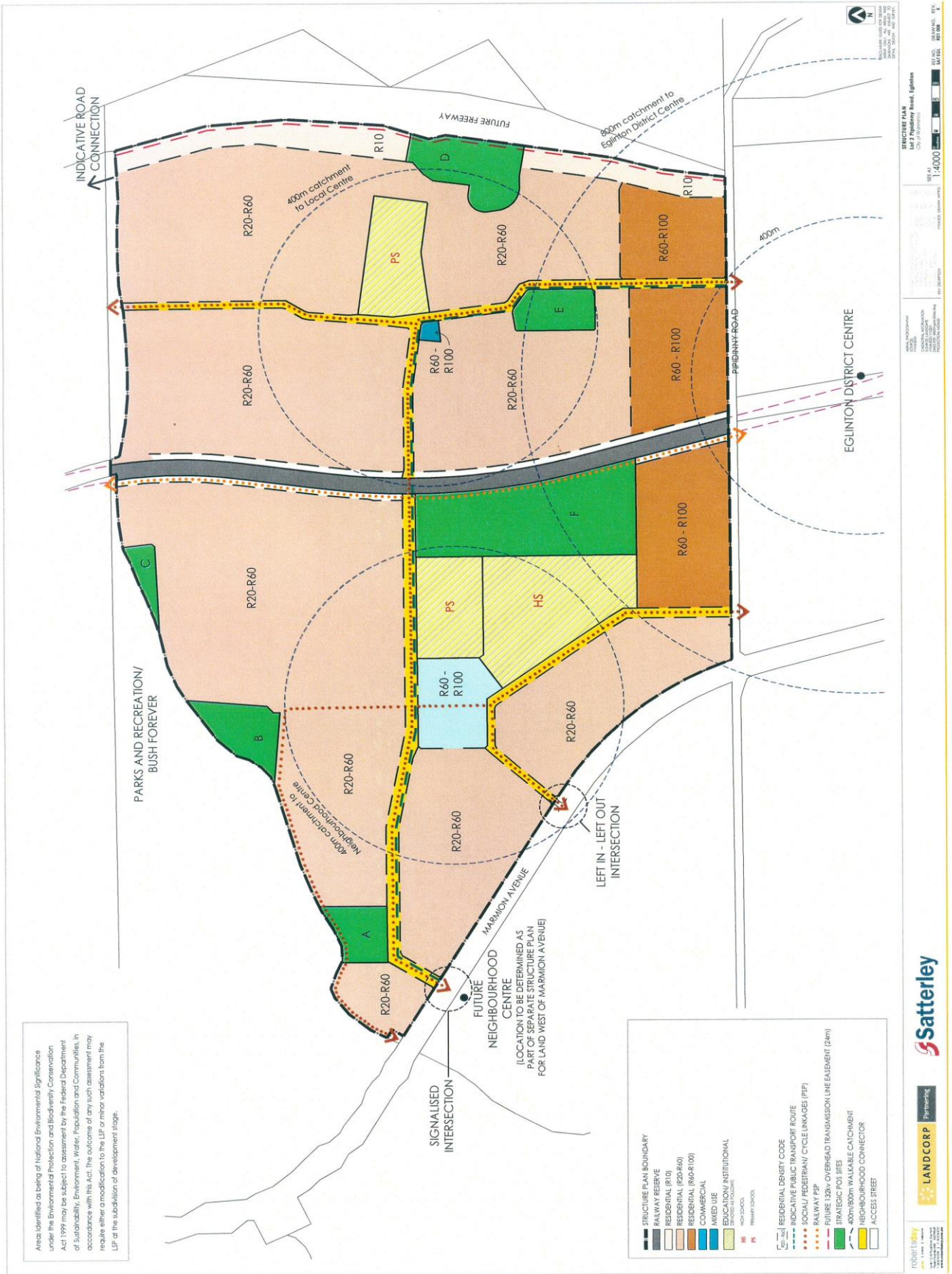
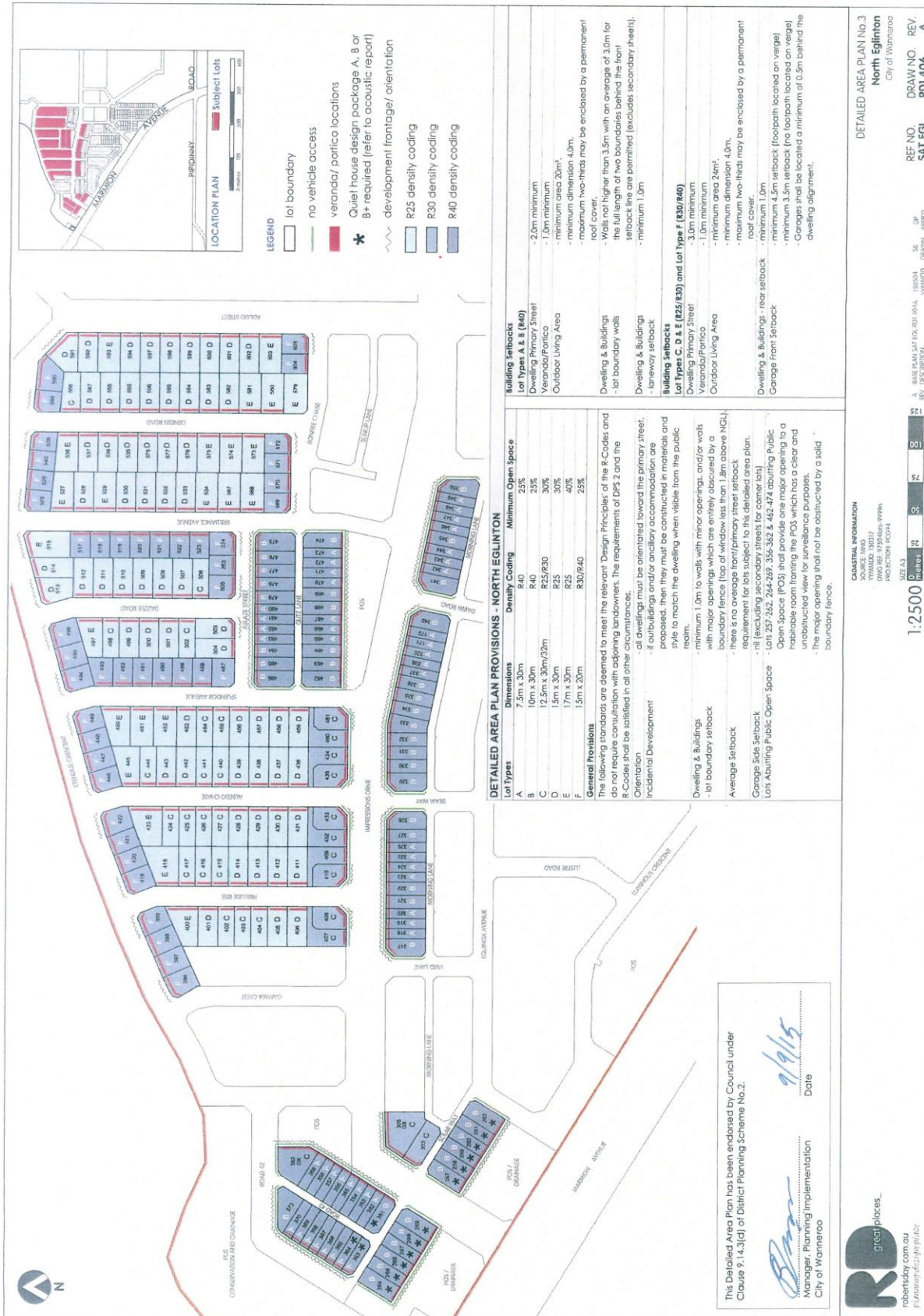


Figure 2A Stages 3-9 Eglinton



2.0 AIM

The aim of the Bushfire Management Plan is to reduce the occurrence of and minimise the impact of bush fires thereby reducing the threat to life, property and the environment.

The Fire Management Plan sets out to reduce this threat by:

- Identifying the objectives of this Fire Management Plan (Section 3)
- Describing the site's description, topography, cultural features and land use (Section 4);
- Identifying the site's potential bush fire issues (Section 5); and
- Outlining the fire mitigation strategies for the site, including identifying the parties responsible for undertaking these fire mitigation strategies (Section 6).

The City of Wanneroo has the responsibility and powers under the *Bush Fires Act 1954* to ensure that this Fire Management Plan, City of Wanneroo Firebreak Notice and any Special orders issued under the *Bush Fires Act 1954* are complied with.

3.0 OBJECTIVES

The objectives of this Fire Management Plan are to:-

- Identify bushfire hazards and propose bush fire prevention measures for the site and the interface to the Bush Forever site adjoining the site to the north in accordance with *Planning for Bush Fire Protection Guidelines- Edition 2 2010*;
- Define the building construction standards where lots interface with vegetation within the site- Public Open Space areas and the adjoining Bush Forever site;
- Identify access for firefighting operations and daily maintenance;
- Identify current and future landowner, developer and City of Wanneroo responsibilities for various components of this fire management plan; and
- Document in the Appendices section of this Fire Management Plan, the acceptable solutions adopted for the development of Lot 2 Pipidinny Road North Eglinton.

4.0 DESCRIPTION OF THE AREA

4.1 GENERAL

This Fire Management Plan applies to Lot 2 Pipidinny Road North Eglinton Estate which is to be subdivided into urban lots.

Pipidinny Road is located along the southern boundary, Marmion Avenue forms the Western boundary, the future Mitchell Freeway Extension is located on the eastern boundary and bush forever site is located on the northern boundary. It is proposed to set aside land for the extension of the Perth-Joondalup Rail Line which divides the site approximately in half. The area to the south of Pipidinny Road is proposed to be developed into urban residential housing in the future.

The vegetation of the area consists of Open Shrub Class D and Closed Heath Class C to Open Shrub. There is one pocket of Tuart Woodland located in the central eastern area and is proposed to be contained in an area Public Open Space. (GHD vegetation survey Feb 2011)

The purpose of this Fire Management Plan is to detail the fire mitigation strategies for the urban interface with the Bush Forever land and Public Open Space areas.

4.2 CLIMATE

The Mediterranean climate experienced by this area is such that the majority of rain falls in late autumn through to late spring. This rainfall supports substantial vegetation growth which dries off in Summer/Autumn.

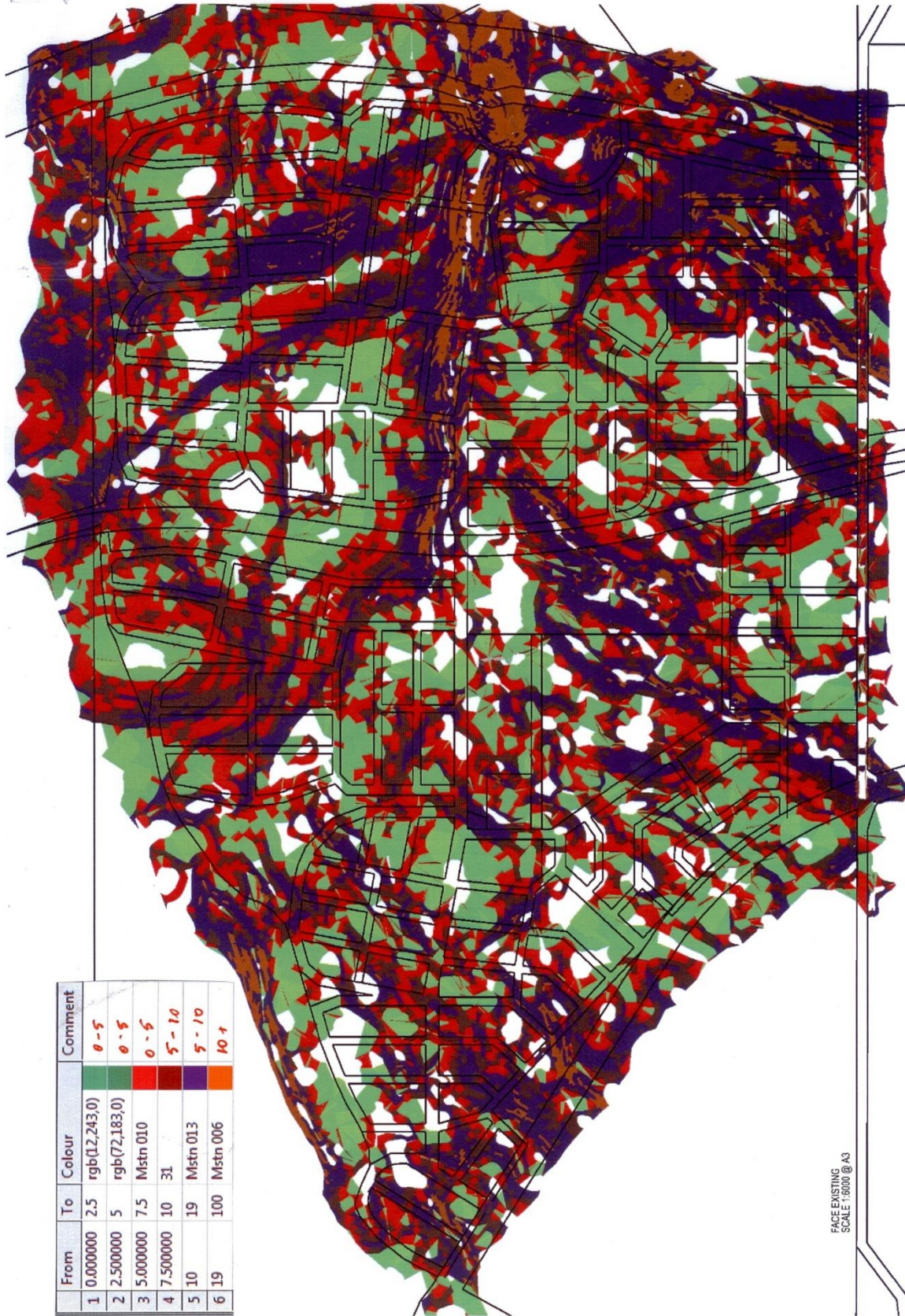
The combination of prevailing winds and dry vegetation poses a fire risk and bush fire control is considered essential for the protection of life and property, and to ensure that uncontrolled burning does not degrade existing and replanted vegetation.

The bush fire season is generally from October to the following May, but is subject to seasonal changes and drought conditions.

4.3 TOPOGRAPHY

The site consists of old sand dune that in some areas area relatively steep around 10° but the area is generally undulating with majority of the area being 0°-5° with some areas of 5°-10° and small areas of 10°-15° . See Figure 3

Figure 3 Slopes.



4.4 BUSH FIRE FUELS

The Vegetation Types map (Figure 4) has been prepared for the site. In the draft *Vegetation Guide for Bushfire Assessment in WA* (September 2015) Banksia Woodland is now rated as Class D Scrub. “Banksia Woodland requires particular consideration. The physical structure of Banksia Woodland, fire development and wind driven fire behaviour is consistent with Class D Scrub and should be modelled as such”.

On the 4th October 2015 a review of the vegetation classification was carried out along the northern boundary of the Stages 3-9 and vegetation classification was carried out in accordance with the draft *Vegetation Guide for Bushfire Assessment in WA* the results are as follows.

The vegetation to the North (in the Bush Forever site is Open Scrub (2-4 metres) Class D. There is some vegetation adjoining the northern boundary in the Bush Forever Site that is identified in the flora survey as Banksia Woodland which in the new Draft Vegetation Guide (WA) September 2015 is classified as Scrub Class D. The vegetation is upslope from the proposed dwellings.

The Open Shrub (Class D) has bush fire fuels of approximately 25 tonnes/ha. (Table B2 AS 3959-2009).

4.5 LAND USE

The site is to be developed into Urban Residential lots School sites, neighbourhood centre and public open space/drainage areas which restricts further development/subdivision of any of the site. If lots are further subdivided in the future a separate Fire Management Plan is required for that subdivision.

4.6 ASSETS

Lot 2 Pipidinny Road is currently vegetated as is the adjoining areas with Pipidinny Road located on the southern boundary of the site, Marmion Avenue on the western boundary and a Bush Forever site along the northern boundary.

The current assets are the vegetation with the Bush Forever site and proposed Public Open space areas, Pipidinny Road, Marmion Avenue, adjoining bush lands, Power line along Pipidinny Rd. other infrastructure on Marmion Avenue associated with traffic control (e.g. street lighting, roundabouts etc.)

The area to the south of Pipidinny Road is also to be developed into urban residential in the future which will remove vegetation south of Pipidinny Rd.

4.7 ACCESS

The proposed road system has several entrances off Pipidinny Road and Marmion Avenue. See Figure 2.

Each stage of land release will have two (2) access/egress roads installed.

There is a 20 metre road proposed to separate the proposed dwellings and the Bush Forever site from the proposed rail reserve to the eastern boundary of the site and the remainder of the interface will have a 20 metre road reserve other than where POS adjoins Bush Forever.

Land for the extension of Mitchell Freeway north has been set aside along the eastern boundary of the site. However planning for access onto the freeway is not currently publically available.

Figure 4 Vegetation Types as per GHD Survey

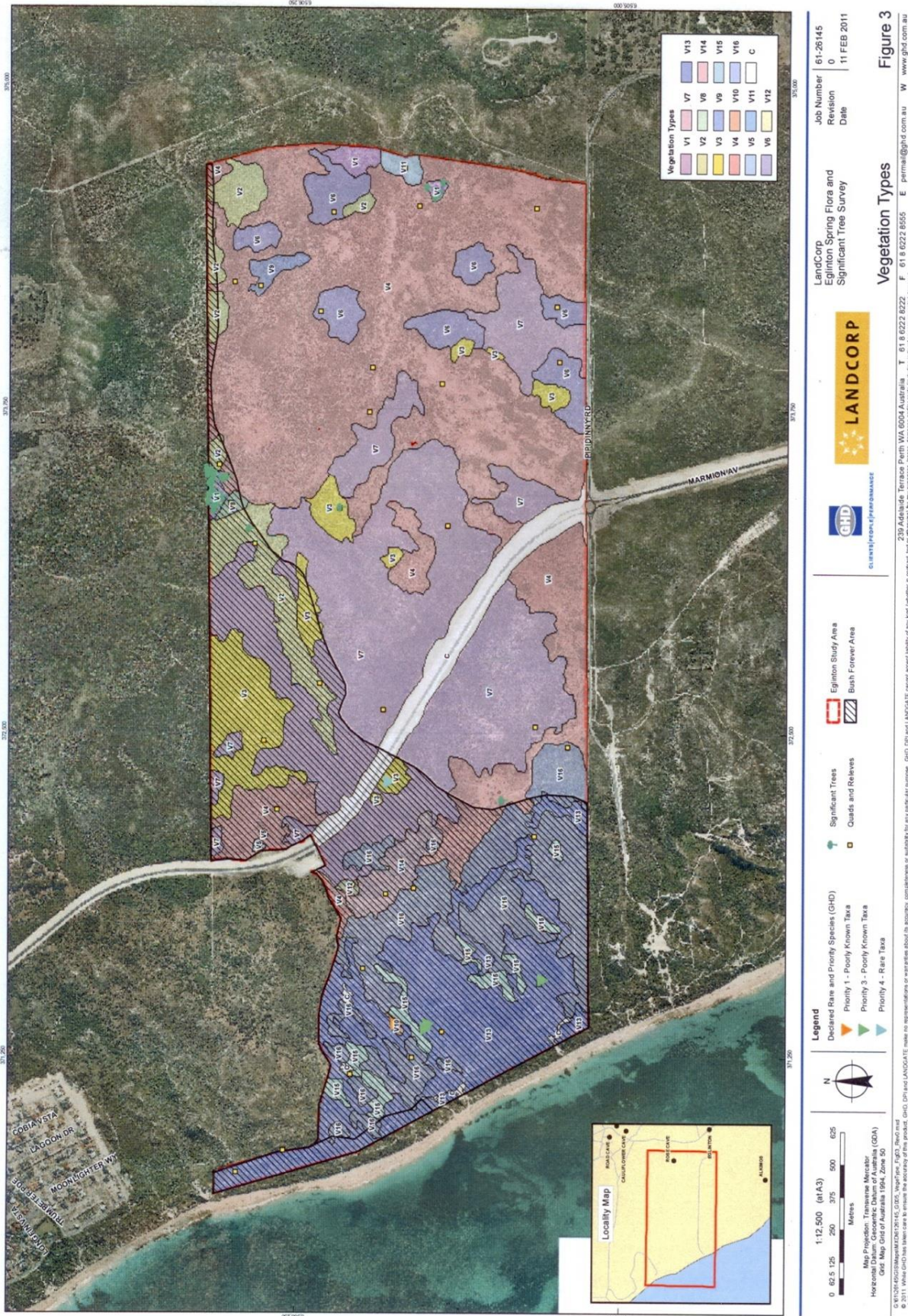


Figure 5 Vegetation Classifications as per Planning for Bush Fire Protection



4.8 WATER SUPPLIES

4.8.1 Domestic Water Supplies.

Water supplies for domestic use will be supplied from the Water Corporation mains water supply.

4.8.2 Water for Fire Fighting

Fire Hydrants will be installed by the developer along roads in accordance with the “*Water Corporation No 63 Water Reticulation Standard*” including fire hydrant road and pole markings.

5.0 BUSH FIRE ASSESSMENT

5.1 BUSH FIRE HISTORY

The site has been subject to infrequent wildfires, no documented fire history was available. However the following comment was noted in the *Landcorp Eglinton Spring Flora and Significant Tree Survey* (GHD February 2011) “A large proportion of the Study area east of Marmion Avenue has been highly disturbed by recent fires and by the grazing of stock over time”.

5.2 BUSH FIRE RISK

The site currently has a firebreak around the boundary of the site that complies with the City of Wanneroo Firebreak Notice. There are some firebreaks in adjoining areas but may not be of a sufficient standard to use as a boundary to contain a bush fire. However with the design of this development and the clearing of vegetation for the urban development the risk to the development will be greatly reduced other than the possibility of bush fires threatening the outer edges of the development especially as along the northern boundary which remain as Bush Forever.

The extension of the Mitchel Freeway will be located on the eastern boundary, south of Pipidinny Rd will be developed as urban residential and part of the area to the west of Marmion Avenue may also be developed as urban residential.

The risk to dwellings located within 100 metres of external and internal vegetation will be lessened by installing an appropriate setback between the Lot boundaries and vegetation appropriate to BAL ratings determined from Table 2.4.3 of AS 3959-2009.

If bush fires occur in the adjoining areas, Bush Forever Site or Public Open Space area, dwellings and buildings may come under ember attack.

With smoke from the fires it may cause disruption to traffic on major local roads of Pipidinny Road and Marmion Avenue and local roads within the development and on the future Freeway and future train services on the extension of the Perth-Joondalup line.

5.3 BUSH FIRE HAZARD

In *Planning for Bush Fire Protection* Appendix 1 methodology for classifying bush fire levels is detailed. The methodology rates bush fire hazard using vegetation type. The methodology is also based on the underlying assumption that land in Western Australia is predominantly undulating. The methodology specifies three bush fire hazard levels “Low”, “Moderate” and “Extreme”.

This methodology has been used in this Fire Management Plan.

The assessment of fire risk takes into account existing site conditions which include:

- Topography with particular reference to ground slopes and accessibility;
- Vegetation cover – both remnant and likely revegetation; and
- Relationship to surrounding development.

The Bush Fire Hazard Assessment is “Moderate” in retained vegetation areas Class D – Open Shrub. The adjoining areas are also rated as “Moderate” with an area rated “Extreme” to the east of the proposed Freeway Reserve

Due to the vegetation being classified as “Extreme” or “Moderate” the area is a *Bush Fire Prone Area* and as such AS 3959-2009 applies to new residential areas.

Vegetation within the urban residential area will be cleared.

5.4 BUSH FIRE THREAT

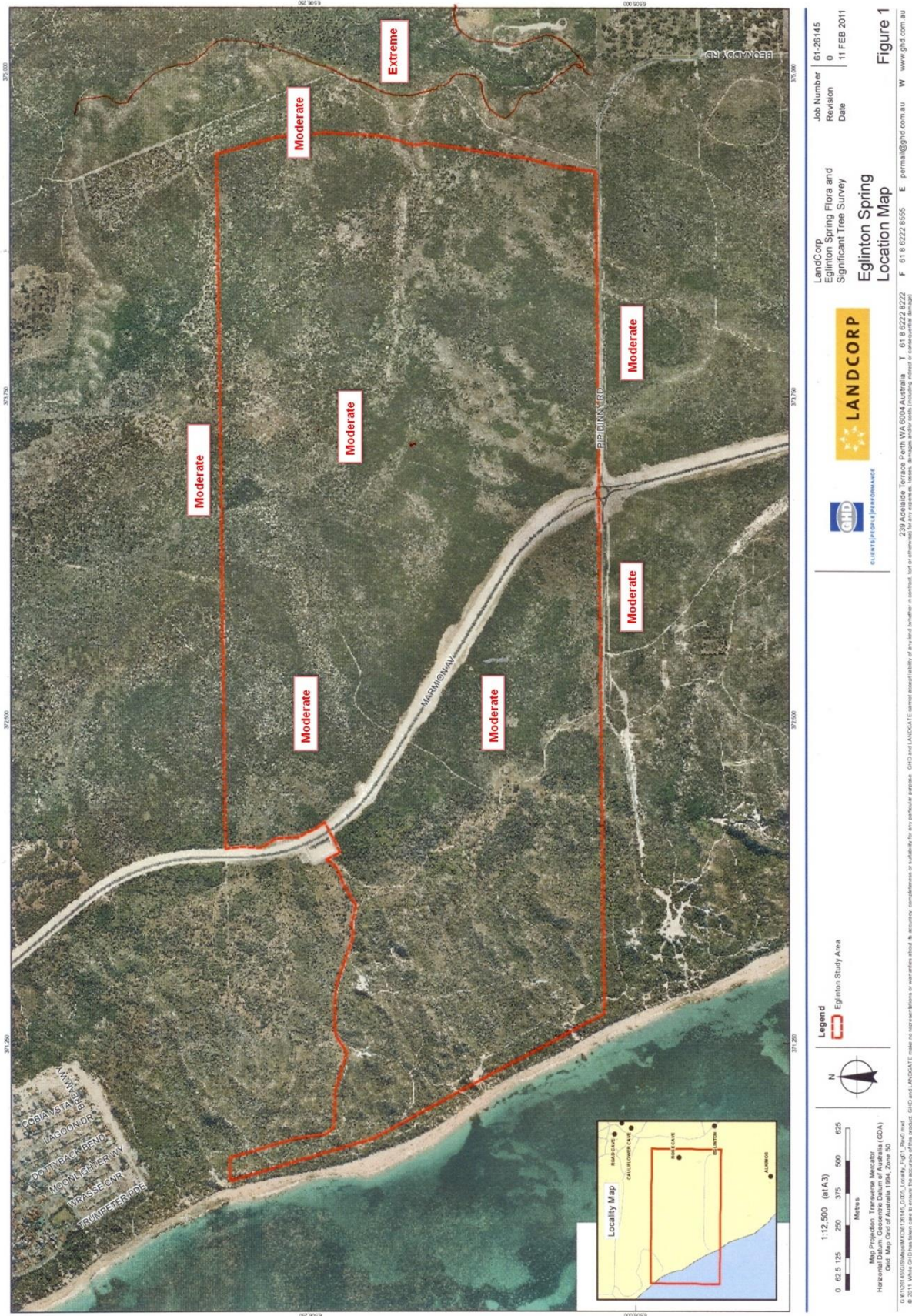
The area within the development site other than areas within Public Open space will be cleared so the fire hazard will be reduced to “Low” other than the vegetated areas of POS. The areas outside the development site will remain as or “Moderate” until they are cleared for the Freeway Extension or developed for urban development.

The Bush Forever site, adjoining vegetation outside the site and vegetated Public Open Space within the development are an ongoing threat to the development however setbacks complying with *Planning for Bush Fire Protection* and AS 3959-2009 BAL rating will apply.

Bush fires that occur during the construction phase of the site and until houses are constructed on all lots there will be a possible threat to the development. Best practice suggests the Bush Forever site should have a fire management plan developed for the site by the landowner/managing authority to lessen the potential threat to residents on roads, freeway and trains as smoke may affect these transport systems. Within the bush forever access for fire appliances is also recommended to be brought up to the standard detailed in *Planning for Bush Fire Protection* as the levels between the dwellings within the development may be different to the levels within the Bush Forever site making fire suppression difficult from perimeter roads.

Smoke from bush fires outside the development area may cause visibility problems and exacerbate respiratory medical conditions of residents.

Figure 6 Bush Fire Hazard Assessment



5.5 SUMMARY OF BUSH FIRE POTENTIAL ISSUES

Bush fire issues that have been identified for this site and adjoining land are:-

- The site is vegetated with Shrub - Class D with a bush fire rating as “Moderate”.
- The site is a Bush Fire Prone Area.
- Lack of access within adjoining areas restricts fire fighting strategies to existing major roads.
- Bush Forever site to the north is poorly managed. The Developer has no responsibility for this land as it has been handed over to the State Government as a Bush Forever site. The Development of this Site is not reliant on any fire management strategies being implemented in the adjoining Bush Forever Site.
- Bush fires in the adjoining vegetated areas may cause visibility problems to transport systems, exacerbate respiratory medical conditions and ember attack on dwellings within 100 metres of vegetation.

6.0 FIRE MITIGATION

6.1 HAZARD MANAGEMENT

This section outlines the actions and works that are to be undertaken in order to be successfully implement the fire protection strategies of this Fire Management Plan as it applies to the Eglinton North Estate.

- An external road system will separate the Lots from vegetation other than where the POS adjoins the Bush Forever site and along the eastern boundary. See Figure 2.
- Along the eastern boundary lots (R10 size—Figure 2) will be sufficiently large to have the required BAL rating setback to modified vegetation zone installed at the rear of the dwelling to comply with AS 3959-2009 BAL construction standards. Also a 32 metre power line easement is located between the dwellings and the proposed Freeway Reserve.
- All vegetated POS area will be managed so that bush fire fuels in vegetated areas greater than 1 ha will have bush fire fuels managed below 8tonnes/ha. This will initially be the responsibility of the Developer but in the long term will become the responsibility of the City of Wanneroo when the POS areas are vested with them.
- All road reserves adjoining POS vegetation and the Bush Forever site are to be managed to the Building Protection Zone standard detailed in Section 7.3.
- The Developer is to modify then manage road reserves that act as a setback between a dwelling and vegetation (Vegetated POS and Bush Forever site) to the Building Protection Zone Standard until the management of the road reserve is handed over to the City of Wanneroo.
- During staged land releases the Developer will maintain a 100 metre area around the stage to be released to the building protection Zone standard to avoid unnecessary increase in dwelling construction standards to as 3959-2009 BAL ratings.

6.2 BUSH FIRE RISK MANAGEMENT

6.2.1 Total Fire Ban Days

A Total Fire Ban is declared because of the extreme weather conditions or when fires are seriously stretching fire fighting resources. A Total Fire Ban is declared by DFES following consultation with Local Governments.

When a Total Fire Ban is declared it prohibits the lighting of any fires in the open air and any activities that might start a fire. The ban includes all open fires for the purpose of cooking or camping. It also includes the use of incinerators, welding, grinding, soldering and gas cutting equipment.

The Department of Fire and Emergency Services and the City of Wanneroo are to continue to educate the public on what a Total Fire Ban means and what actions the public need to take.

6.2.2 Public Education Program

The City of Wanneroo is to continue to provide the community with advice on bush fire prevention and preparedness through brochures, newspaper articles and compliance with any Fire Control Notice and/or Hazard Reduction Notice issued to any owner or occupier under the Bush Fires Act and has relevant information set out on their web site.

The subdivider is to provide a copy of the current City of Wanneroo Fire Control Notice, *The Homeowners Survival Manual* and *Prepare Act Survive* brochure and this Bushfire Management Plan at the time of sale of a Lot to all new landowners whose Lot has an increased Construction standard in accordance with AS 3959. It is essential that the Real Estate agent handling the sale of lots on behalf of the subdivider advises potential landowners that a Bushfire Management Plan exists and that the modification of vegetation and on going fuel reduction will be required within this development.

Other Public Safety and Community information on Bush Fires is available on the Department of Fire and Emergency Services web site www.dfes.wa.gov.au and the City of Wanneroo website www.wanneroo.wa.gov.au

6.3 FUTURE DEVELOPMENT

This Fire Management Subdivision Plan has been prepared on the basis of the North Eglinton Local Structure Plan being developed in accordance with the layout detailed in Figure 2. Any future development that is contrary or on addition to this subdivision plan will require approval from the City of Wanneroo and may result in the need to review the provisions of this Fire Management Plan or the preparation of a new Fire Management Plan.

6.4 ACCESS AND FIREBREAKS

6.4.1 Road System

The road system will have multiple links to Marmion Avenue and Pipidinny Road. In most areas an internal road will separate areas of Public Open Space from urban development.

All road access will be designed and constructed to Council specifications and will comply with Acceptable solutions A2.1, A2.2 of the *Planning for Bushfire Protection Guidelines (2010)*.

6.4.2 Internal Firebreaks

Notwithstanding the provisions of this Fire Management Plan, all lots within the site must comply with the requirements of the City of Wanneroo Firebreak Notice, as published annually.

6.4.3 Private Driveways

Private driveways into residential homes must comply with the City of Wanneroo specifications and comply with acceptable solution A2.5.

6.5 FIRE SAFER AREAS

In the event of a bush fire, the Incident Controller of Fire Fighting Operations will advise if an evacuation is necessary and, in conjunction with the City of Wanneroo Emergency Services, direct residents to Safer Refuge Areas.

6.6 ASSESSMENT OF FIRE MANAGEMENT STRATEGIES

The implementation of this Fire Management Plan will be implemented at each stage of land release.

It will be the responsibility of the developer to implement the provisions of this Fire Management Plan in order to seek clearance of those conditions of subdivision.

Likewise it is the responsibility of the City of Wanneroo to ensure that all standards required in this Fire Management Plan are met by the developer prior to clearing any conditions of subdivision relating to this Fire Management Plan.

After any major fires that may occur during or once this development has been completed, the City of Wanneroo may conduct a Post Incident Analysis of the fire, which may include identifying and implementing any changes that may be needed to improve the performance of fire prevention strategies.

With the hazard management provisions detailed in this Fire Management Plan any fires that occur in the site are not expected to devastate the community if the provisions of this Fire Management Plan are implemented by the Developer and maintained by landowners within their Lot and by the City of Wanneroo in Public Open Space and relevant road reserve adjoin the Bush Forever site..

In the Foreword of AS 3959- 2009 it states that “It should be borne in mind that the measures contained in this standard cannot guarantee that a building will survive a bushfire event on every occasion. This is substantially due to the degree of vegetation management, the unpredictable nature and behavior of fire and extreme weather conditions.” This Fire Management Plan has been prepared in accordance with the acceptable solutions detailed in *Planning for Bush Fire Protection Edition 2 (2010)*.

6.7 IMPLEMENTATION OF THE FIRE MANAGEMENT PLAN.

This Fire Management Plan will be implemented by the Developer at each stage of land release.

In implementing this Fire Management Plan, the following responsibilities have been determined:

6.7.1 Developer's Responsibilities

Prior to the issuing of Titles the developer shall be required to carry out works described in Section 6 of this Fire Management Plan to the satisfaction of the City of Wanneroo and the Western Australian Planning Commission. The developer will implement the follow works at each Stage of land release subject to approval of the City of Wanneroo:-

- All internal roads and access ways are to comply with the design requirements of the City of Wanneroo except where the cost of completing construction has been bonded with the City of Wanneroo;
- Implement Landscape areas where roads reserves are 15 metres wide to achieve the required distance from Lot boundaries to retained vegetation.
- Reticulated water supply (including hydrants) to be provided to the satisfaction of the “Water Corporation No 63 Water Reticulation Standard”, provide a map of fire hydrant locations to Department for Fire and Emergency Services (DFES) and the City of Wanneroo. Hydrants are to be identified by both pole and road markings, except where the cost of completing construction has been bonded with the City of Wanneroo and/or Water Corporation See Section 7.3.5;
- The developer is required to lodge a Section 70A Notification on each Certificate of Title, proposed by the subdivision to identify the existence of this fire management plan and of any lots that are imposed with an increased building construction standard in accordance with AS 3959-2009 (BAL ratings). The notification shall state “*The Lots are subject to a Fire Management Plan*”;
- Prior to the issue of titles for any lots at the stage of release, the developer to provide detailed Development Lot plans specifically identifying properties with BAL rating imposed in which the increased building constructions standards will be applicable. This will apply to any dwellings that area within 100 metres of vegetation in excess of 1 ha;
- All vacant land is to comply with the City of Wanneroo Firebreak Notice as published annually;
- All purchasers/new property owners are to be advised of the location of any hydrant that is positioned on their Lot or verge and the requirement for the hydrant to remain unobstructed at all times;
- Developer is to notify any landscaping contractor’s, under direction of the developer, of relevant hydrant locations and the requirement to ensure the hydrant is not obstructed, covered over or damaged;
- Supply a copy to each new property owner on sale of the allotment requiring an increase in dwelling construction standard of following;-
 - this Fire Management Plan;
 - *The Homeowners Bush Fire Survival Manual*;
 - *Prepare Act Survive (or similar suitable documentation)*; and
 - City of Wanneroo Fire Break Notice

6.7.2 Property Owner's Responsibilities

To maintain the reduced level of risk and threat of fire, the owners/occupiers of all lots created by this proposal will be responsible for undertaking, complying and implementing measures protecting their own assets from the threat and risk of bush fire:

- Maintain the property in good order to minimize potential bushfire fuels to mitigate the risk of fire on the property by complying with the minimum requirements detailed in the City of Wanneroo Firebreak Notice;
- Ensure that vacant lots comply with the City of Wanneroo Annual Firebreak Notice;
- Ensure that where hydrants are located on private property or their verge, the hydrant is not to be obstructed and remain accessible at all times;
- Ensure any contractor's under direction of or working for the property owner, are notified of relevant hydrant location on the property and the requirement to ensure the hydrant is not obstructed, covered over or damaged.
- Ensure that dwellings are construction to the current AS 3959 standard where a lot has been identified as requiring and increased construction standard. There will be a Section 70A notification on the Land Title.
- Complying with the instructions of FESA Fire Services, the City of Wanneroo and/or volunteer fire services in maintaining the property or during the event of a bushfire.
- Be aware of building conditions for lots identified. The landowner shall request a Bushfire Consultants to reassess the BAL for those sites pre identified, with a copy of the assessment results to be submitted as part of any building license application.
- Ensure that in the event an evaporative air conditioner is installed at the property, suitable external ember screens are installed to roof mounted units and complies with AS 3959.
- Understand what is required when a Building Protection Zone is established as part of the landscaping of the Lot and be aware that the maintenance and upkeep of the Building Protection Zone on the property is the owners/occupiers responsibility in perpetuity.

6.7.3 City of Wanneroo

The responsibility for compliance with the law rests with individual property owners and occupiers and the following conditions are not intended to unnecessarily transfer some to the responsibilities to the City of Wanneroo.

The City of Wanneroo shall be responsible for:

- Endorsing a Section 70A Notification on each Certificate of Title;
- Assess each building license application received against the current AS 3959 to determine suitability of the proposed construction;
- Enforcement of the City of Wanneroo Firebreak Notice;
- Once the setback distance between a lot boundary and retained vegetation has been established and maintained to the Building Protection Zone Standard to the satisfaction of the City of Wanneroo by the

Developer for the set period, then management of that land is transferred to the City of Wanneroo the Council is then responsible to maintain the setback to the required standard in perpetuity;

- Those parts of Public Open Space that form part of the setback distance between allotments and retained vegetation will be managed by the City of Wanneroo and are to comply to the Building Protection Zone standards detailed in the Fire Management Plan;
- Provide fire prevention and preparedness advice to landowners upon request.
- Ensure Compliance with this Fire Management Plan prior to clearance of conditions of subdivision for each stage of land release;
- Develop and Maintain Fire Fighting Facilities for the District.

7.0 APPENDICES

7.1 WORKS PROGRAM

The works program required in this Fire Management Plan must be implemented by the developer at each stage of land release.

Landowners will be responsible for the annual compliance with City of Wanneroo Firebreak Control Notice.

Once Public Open Space areas are handed over to the City of Wanneroo, the Council will be responsible for the annual maintenance setback distance between the Lot and retained vegetation to maintain BAL ratings on adjoin dwellings.

7.2 GUIDELINES SPECIFICATIONS AND MINIMUM STANDARDS

The following section outlines the required specifications and minimum development standards that are required under this Fire Management Plan.

7.2.1 Building Protection Zone

The aim of the Building Protection Zones (BPZ) is to reduce bush fire intensity close to dwellings, and to minimise the likelihood of flame contact with buildings.

The Building Protection Zone is a low fuel area immediately surrounding a building complying with *Planning for Bush Fire Protection* Acceptable Solution A4.3.

The following Building Protection Zone is to apply to the interface area between the Bush Forever site and Public Open Space and nearby residential dwellings and along the eastern boundary and must fulfil the following conditions:

- Bush fire fuels must be maintained at or below 2 tonnes per hectare and dry grass must be maintained below a height of 50mm;
- The spacing of trees are to be planted to provide for a separation of 10 metres between crowns when trees mature;
- Trees are to be progressively low pruned at least to a height of 2 metres;

- There are no tree crowns over hanging a building;
- Branches, must be removed at least 2 metres back from the eaves of all buildings;
- Shrubs within the Building Protection Zone have no dead material within the plant;
- Trees in the Building Protection Zone have no dead material within the plant's crown or on the bole (tree trunk);
- Fences within the Building Protection Zone are to be constructed using non combustible materials (e.g. colour bond iron, brick, limestone);
- All leaves, twigs, logs, branches must be removed from within the building protection zone. Annual falls of leaf litter must be raked up and removed or burnt.

7.2.3 Dwelling Construction

Individual dwellings on designated lots shall be designed and built to conform with:

- The Building Code of Australia; and
- AS 3959 *Construction of Buildings in a Bushfire Prone Area*;

The minimum distance of 100 metres (from vegetation rated 'Moderate' or 'Extreme') may be reduced in compliance with AS 3959. Under AS 3959 as the distance from the vegetation is reduced, the construction standard must be increased. Table 2.4.3 AS 3959 sets out this relationship and Section 2 of AS 3959 details the methodology of determining the Bushfire Attack Level (BAL).

BAL (Bushfire Attack Level) Determination Using Methodology from Section 2.2.1 of current adopted AS 3959-2009 and Table 2.4.3 which applies to Lots interfacing the Bush Forever site, Eastern boundary and Public Open Space is:

Table 1 Summary of Determination of BAL using Fire Danger Index 80

Vegetation Class	Setback from Vegetation (METERS)	Slope	BAL	Construction Standard AS 3959-2009	BPZ (metres)	HSZ (metres)
D Shrub	19-27	upslope	19	Section 3 & 6	20	0
D Shrub	27-100	Upslope	12.5	Section 3 & 5	27	0
D Scrub	15-22	0°-5°	29	Section 3 & 7	20	0
D Scrub	22-31	0°-5°	19	Section 3 & 6	31	0
D Scrub	31.1-100	0°-5°	12.5	Section 3 & 5	100	0
D Scrub	17-24	5°-10°	29	Section 3 & 7	20	0

All lots identified in this 'Development' (i.e. Lots within 100 metres of the Bush Forever site, Public Open Space and reserve for the future Freeway extension) will be subject to a Section 70A notification being lodged on the Certificate of Title, with future landowners required to construct any dwelling on these lots in accordance with the construction standards outlined in AS3959.

The BAL rating and setback distances below are indicative based on the existing slopes and will need to be re assessed at the Land release stage when the levels of the site and interface will be more accurate. A map showing the revised BAL levels and the Lots requiring increased construction standards will be provided to the City of Wanneroo as part of the approval process a stage of land release. BAL assessments are to be carried out by a competent Fire Consultant.

Area Northern Boundary Railway Line Easement to Eastern boundary.

The Table above and Shrub Class D details the distance from the front of the Lot to the edge of the Bush Forever where the slope is 5°-10° as minimum of 20 metres (which is made up of a 20 metre wide road reserve), the construction standard of the first row of dwellings in BAL 29 and would be constructed to AS 3959-2009 BAL 29 Section 3 and 7. The minimum 20 Metres would be managed to the Building Protection Zone Standard.

Area along the Eastern boundary Power Line easement rear of Lot.

Table 1 above (Row 6) Class D Scrub details the distance from the rear of the dwelling to the minimum distance to the rear of the Lot with a slope of 5°-10° (some areas are 0°-5°) as 35metre (power line easement is 32 metres) the construction standard would be AS 3959-2009 BAL 19 Sections 3 & 6. The 35 metres would be installed by the developer to be managed to the Building Protection Zone standard by the landowner.

Area along northern boundary west from Railway line easement and adjoin Public Open Space areas

Table 1 above (1st & 2nd row) Class D scrub details the distance from the front of the Lot to the edge of vegetation where the slope is upslope as 20 metres (which is the width of the road reserve or is a combination of road reserve and the front setback within Lots) the construction standard of the first row of dwellings would be to AS 3959-2009 BAL 19 Sections 3 & 6. See Figure 8 for Indicative BAL Ratings.

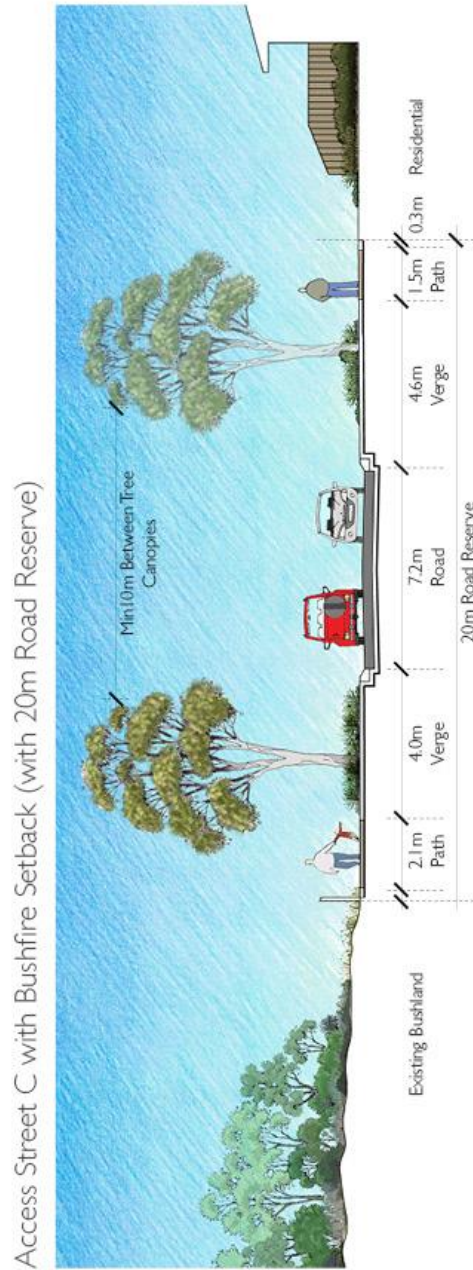
All adjacent structures such as garages, carport and shed that are not attached to the dwelling must be separated from the dwelling by a minimum of 6 metres otherwise the structure must comply with construction standard of the dwelling.

Compliance with these construction standards will be assessed at the time of Building License Application by the City of Wanneroo.

As a result of ember attack Evaporative Air conditioners can be the cause of a fire starting in a dwelling. It is a requirement that the roof unit of an evaporative air conditioner is enclosed in a suitable external ember protection screen. More information is available at www.fesa.wa.gov.au. and in AS 3959.

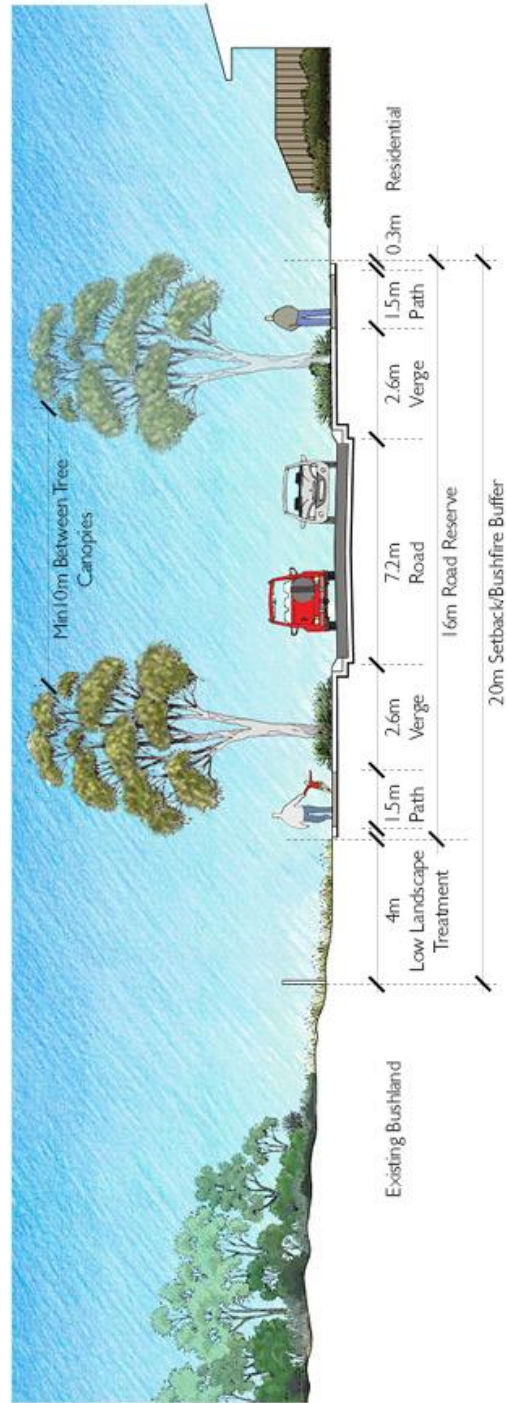
At the Building Permit Application stage a landowner may request a Fire Consultant to carry out a Bushfire Attack Level Assessment to confirm the indicative BAL assessment provided by the Developer at the Stage of Land Release or provide a new BAL rating that will apply to a particular Lot. A copy of the BAL report is to be sent to the City of Wanneroo as part of the Building Permit Application.

Figure 7 Schematic Diagram of Bush fire setback/Building Protection Zone separating dwellings and retained vegetation - 3 pages.



The above diagram shows a 20 metre Road Reserve the same schematic layout will apply for a 25 metre Road Reserve

Access Street C (16m Road Reserve) with Bushfire Setback



Typical Plan View of Bushfire Setback

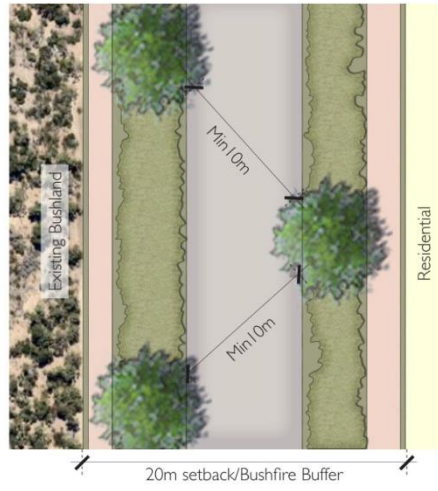
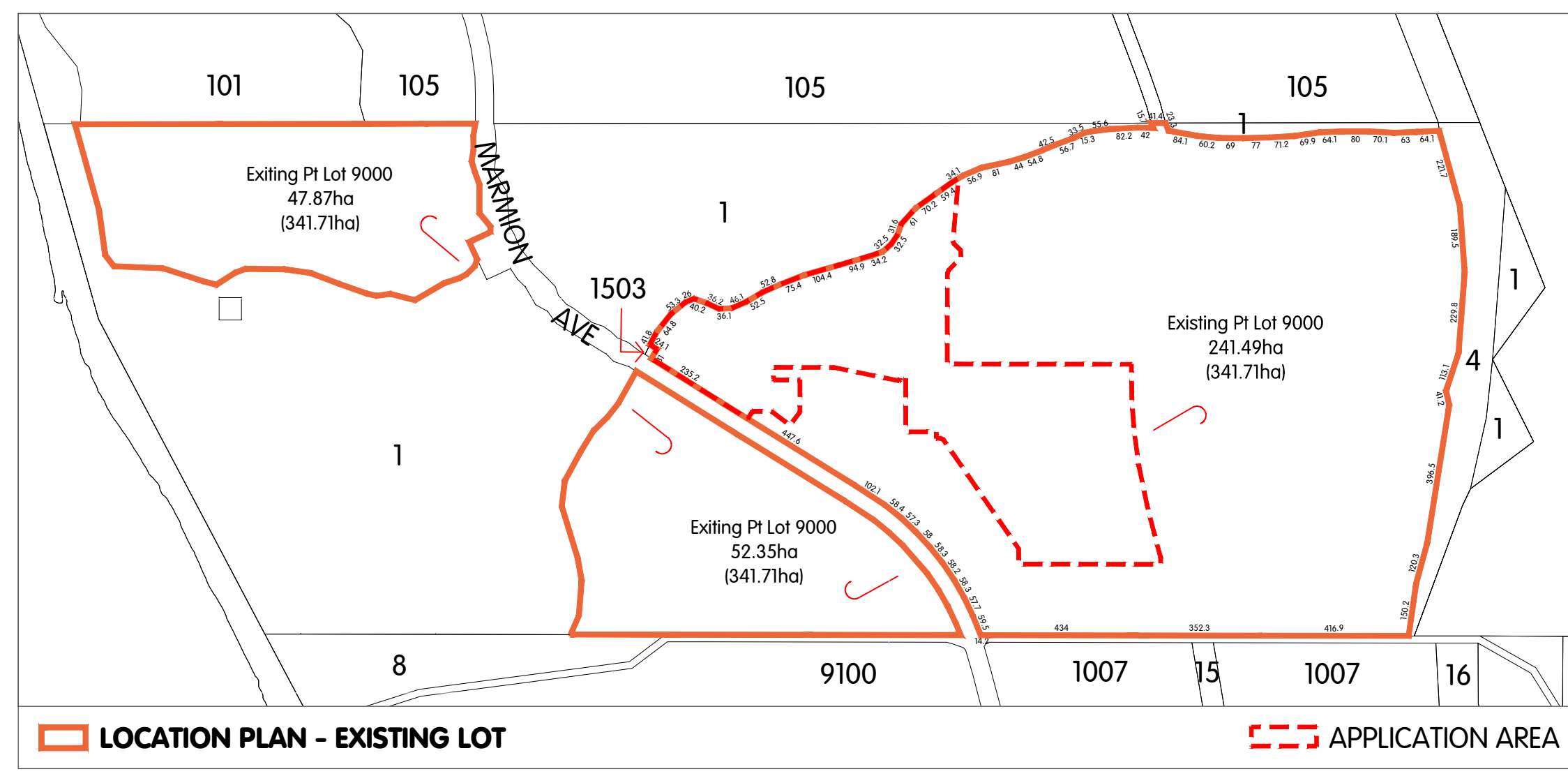
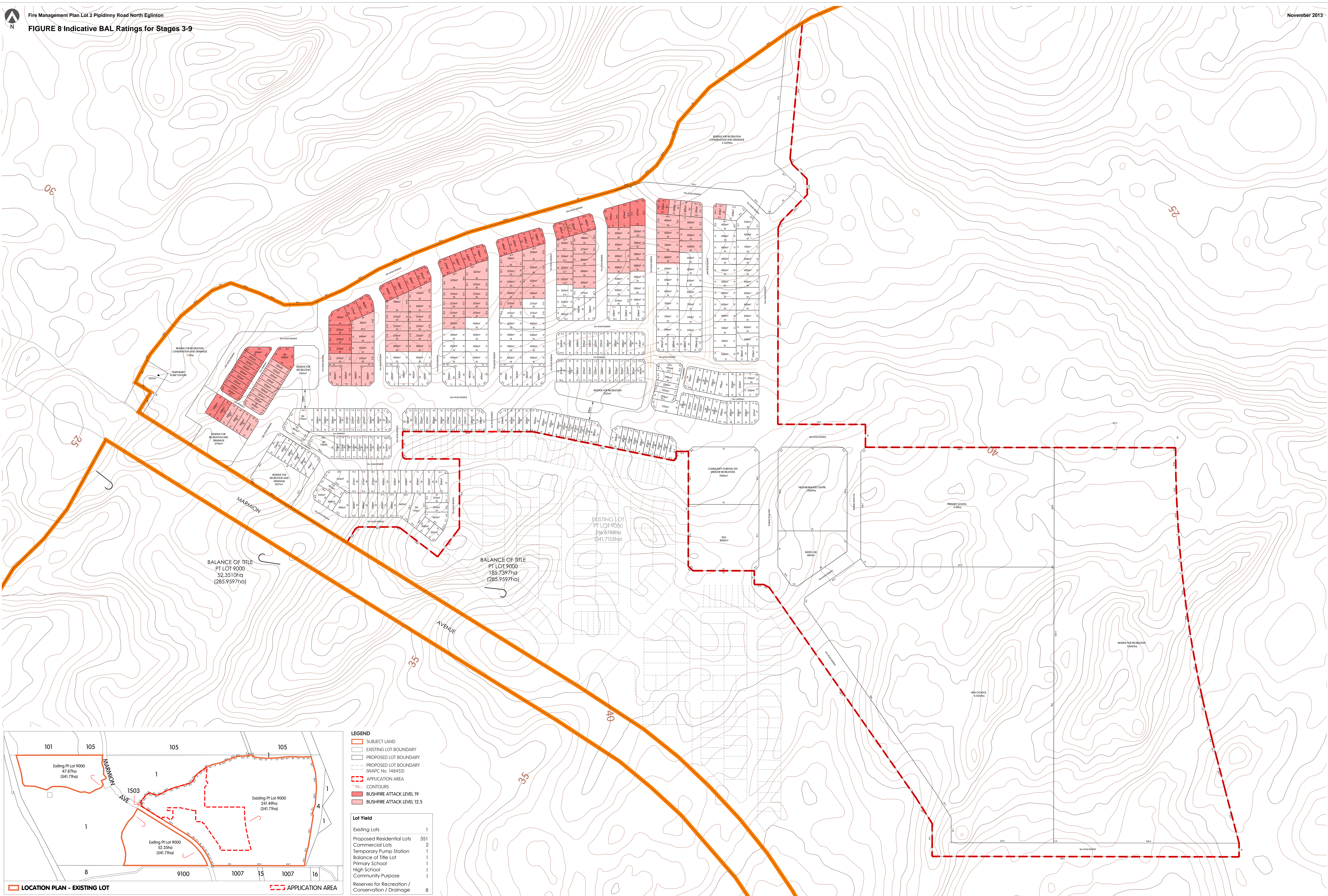




FIGURE 8 Indicative BAL Ratings for Stages 3-9



LEGEND

- SUBJECT LAND
- EXISTING LOT BOUNDARY
- PROPOSED LOT BOUNDARY
- PROPOSED LOT BOUNDARY (WAPC No. 148452)
- APPLICATION AREA
- CONTOURS
- BUSHFIRE ATTACK LEVEL 19
- BUSHFIRE ATTACK LEVEL 12.5



7.3 GLOSSARY

Acceptable Solution

A statement describing an acceptable means of complying with the requirements of corresponding performance criteria.

Appliance or Fire Appliance

A fire fighting appliance (vehicle) with structural, grass and bushfire fighting capabilities, with either a 2000 litres water capacity (2.4 appliance) or a 3000 litre water capacity (3.4 appliance) and four (4) wheel drive.

BAL – (abb) Bushfire Attack Level.

Bushfire Attack Level – an assessed rating of a site’s risk to a bushfire, based on vegetation type, slope of the land and its proximity to buildings.

Building Construction Standard Buffer - An area 100 metres wide Including a Building Protection Zone in which an increase in building construction standard in accordance with AS3959 will apply.

Building Protection Zone (BPZ)

Low fuel area immediately surrounding buildings. Minimum width 20 metres, increasing with slope.

Bush

Under the Bush Fires Act 1954 the term bush is defined to include trees, bushes, plants, stubble, scrub and undergrowth of a kind whatsoever whether dead or alive and whether standing or not standing.

Bush Fire or Wildfire

A general term used to describe fire in vegetation that is not under control.

Bush Fire Hazard.

The flammability, arrangement and quantity of vegetation, dead or alive, that can be burnt in a bush fire. Development is to be avoided in extreme bush fire hazard designated areas.

Bush fire prone area - for the purposes of this fire management plan, a bush fire prone area is an area that has been declared as such by the relevant local government responsible for an area. Once an area is declared bush fire prone, then AS 3959 applies to new residential development in it.

Bush Fire Risk

The chance of a bush fire starting that will have harmful consequences on life and property. It is measured in terms of consequences and likelihood and arises from the interaction of hazards, communities and the environment.

Development Application

An application for approval to carry out a development under either a local planning scheme or regional planning scheme.

Dwelling setback – the horizontal distance between a wall of the dwelling at any point, and an adjacent lot boundary, measured at right angles (90 degrees) to the boundary.

Emergency Access Way

Road not normally open but available to the public (using two wheel drive vehicles) for evacuation during a bush fire emergency.

FESA

The Fire and Emergency Services Authority of Western Australia or the replacement departmental entity as established in the future.

Fire Break or Firebreak

Any natural or constructed discontinuity in a fuel bed used to segregate, stop and control the spread of a bush fire or to provide a fire line from which to suppress a bush fire. This is an area cleared to reduce the risk of bush fire damage.

FDI- Fire Danger Index

The chance of a fire starting, its rate of spread, its intensity and the difficulty of its suppression, according to various combinations of air temperature, relative humidity, wind speed and both the long and short- term drought effects.

Fire Protection

A generic term used to describe the range of services and systems used to mitigate the impact of fire on the community. It encompasses both fire prevention and emergency response.

Fire Management Plan

Ongoing, dynamic document that sets out the medium to long term mitigation strategies for fire hazards and risks in particular developments within local government areas.

Fire Services Access Route

Accessible by heavy four wheel drive fire fighting vehicles.

Fuel Reduction also Hazard Reduction

Removal and modification of bush fire fuel, or increase in building construction standards or a combination of the two.

Hazard Separation Zone (HSZ)

The fuel reduction area between an area bush fire hazard and the buildings (and associated building protection zones) of a development.

Low Fuel Area

An area 100 metres wide of reduced bush fire fuels that is required to surround a Stage of land release and negates the need to increase the standard of dwelling construction on the edge of the Stage of land release. It complies with the Building Protection Zone standards is temporary until the next stage of land is cleared for release.

Performance Criteria.

Statement which specifies the outcomes required for the protection of life and property from bush fires.

POS - abbreviation

Public Open Space.

8.0 FIRE MANAGEMENT PLAN COMPLIANCE CHECKLIST FOR PERFORMANCE CRITERIA AND ACCEPTABLE SOLUTIONS

PROPERTY DETAILS: Lot 2 Pipidinny Road North Eglinton Estate
 Local Government: City of Wanneroo

Element 1: Location

Does the proposal comply with the performance criteria by applying acceptable solution A1.1?

Yes No

Increased dwelling construction and appropriate setback to retained vegetation managed as a BPZ.

Element 2: Vehicular Access

Does the proposal comply with the performance criteria by applying acceptable solution A2.1?

Yes No

Does the proposal comply with performance criteria by applying acceptable solution A2.2?

Yes No

Does the proposal comply with the performance criteria by applying acceptable solution A2.3?

Yes No

N/A

Does the proposal comply with the performance criteria by applying acceptable solution A2.4?

Yes No

N/A

Does the proposal comply with the performance criteria by applying acceptable solution A2.5?

Yes No

In accordance with City of Wanneroo standards

Does the proposal comply with the performance criteria by applying acceptable solution A2.6?

Yes No

N/A

Does the proposal comply with the performance criteria by applying acceptable solution A2.7?

Yes No

N/A

Does the proposal comply with the performance criteria by applying acceptable solution A2.8?

Yes No

N/A

Does the proposal comply with the performance criteria by applying acceptable solution A2.9?

Yes No

Complying with City of Wanneroo Firebreak Notice.

Does the proposal comply with the performance criteria by applying acceptable solution A2.10?

Yes No

N/A

Element 3: Water

Does the proposal comply with the performance criteria by applying acceptable solution A3.1?

Yes No

Developer to install fire hydrants

Does the proposal comply with the performance criteria by applying acceptable solution A3.2?

Yes No

N/A

Does the proposal comply with the performance criteria by applying acceptable solution A3.3?

Yes No

N/A

Element 4: Siting of Development

Does the proposal comply with the performance criteria by applying acceptable solution A4.1?

Yes No

BPZ and increased dwelling construction adjoining retained vegetation

Does the proposal comply with the performance criteria by applying acceptable solution A4.2?

Yes No

N/A

Does the proposal comply with the performance criteria by applying acceptable solution A4.3?

Yes No

Does the proposal comply with the performance criteria by applying acceptable solution A4.4?

Yes No

N/A

Does the proposal comply with the performance criteria by applying acceptable solution A4.5?

Yes No

N/A

Element 5: Design of Development

Does the proposal comply with the performance criteria by applying acceptable solution A5.1?

Yes No

The development uses acceptable solutions as appropriate to meet the requirements under performance criterion P5.

Does the proposal comply with the performance criteria by applying acceptable solution A5.2?

Yes No

Applicant Declaration:

I declare that the information provided is true and correct to the best of my knowledge.

Name of Person Preparing the Fire Management Plan:

Full Name: *B.W. Harris* for FirePlan WA Date: 28/11/2012 FMP was Revised on 30.10.2015

Developer:

Full Name: _____ Signature: _____

Date:

References

Australian Standards AS 3959-2009 Construction of Buildings in Bush Fire Prone Areas.

GHD Pty Ltd Landcorp –Report for Eglinton Spring Flora and Significant Tree Survey. February 2011.

Western Australian Planning Commission (WAPC), Department of Planning (DoP) and Fire and Emergency Services Authority (FESA) 2010 Planning for Bush Fire Protection Guidelines, Edition 2

Vegetation Guide for Bushfire Assessment in Western Australia (Draft September 2015) Department of Planning.