

Appendix J – Bushfire Management Plan

Bushfire management plan/Statement addressing the Bushfire Protection Criteria coversheet

Site address:

Site visit:

Yes

☐

No

☐

Date of site visit (if applicable):

Day

Month

Year

Report author or reviewer:

WA BPAD accreditation level (please circle):

Not accredited

☐

Level 1 BAL assessor

☐

Level 2 practitioner

☐

Level 3 practitioner

☐

If accredited please provide the following.

BPAD accreditation number:

Accreditation expiry: Month

Year

Bushfire management plan version number:

Bushfire management plan date: Day

Month

Year

Client/business name:

	Yes	No
Has the BAL been calculated by a method other than method 1 as outlined in AS3959 (tick no if AS3959 method 1 has been used to calculate the BAL)?		
Have any of the bushfire protection criteria elements been addressed through the use of a performance principle (tick no if only acceptable solutions have been used to address all of the bushfire protection criteria elements)?		

Is the proposal any of the following (see [SPP 3.7 for definitions](#))?

	Yes	No
Unavoidable development (in BAL-40 or BAL-FZ)		
Strategic planning proposal (including rezoning applications)		
High risk land-use		
Vulnerable land-use		

None of the above

☐

Note: Only if one (or more) of the above answers in the tables is yes should the decision maker (e.g. local government or the WAPC) refer the proposal to DFES for comment.

Why has it been given one of the above listed classifications (E.g. Considered vulnerable land-use as the development is for accommodation of the elderly, etc.)?

The information provided within this bushfire management plan to the best of my knowledge is true and correct:

Signature of report author
or reviewer



Date



Metronet – Whiteman Park Drumpellier Drive, Whiteman Bushfire Management Plan

Date: 16 September 2021

Prepared For: Perth Transport Authority

Linfire Ref: 20210416136LOR-BMP-002_0

Linfire Consultancy

ABN: 577 930 47299



Revision	Issue Date	Revision Description	Approved By
0	16 Sept 2021	Issued for Approval	Linden Wears (Level 3 BPAD 19809)

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Fire is an unpredictable force of nature. Changing climatic factors (whether predictable or otherwise) either before or at the time of a fire can also significantly affect the nature of a fire and in a bushfire prone area it is not possible to completely guard against bushfire. The mitigation strategies contained in this Bushfire Management Plan (BMP) are considered to be prudent minimum standards only, based on the standards prescribed by relevant authorities. It is expressly stated that Linfire do not guarantee that if such standards are complied with or if a property owner exercises prudence, that a building or property will not be damaged or that lives will not be lost in a bush fire.

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1.0 Proposal details

1.1 Background

Melconnx, on behalf of the Perth Transport Authority (PTA; the Proponent) is seeking to lodge a Development Application (DA) in relation to proposed development of Whiteman Park Train Station at Lots 98 and 811 Drumpellier Drive, Whiteman (the project area) located in the City of Swan.

The development plan (see Figure 1) identifies that the proposed development will comprise the following elements:

- Station building with platform level (on raised viaduct) and concourse level (at grade underneath the platform)
- Roof canopy
- Bus interchange
- Kiss n Ride drop off area
- Bus shelter
- Signalling Equipment Room (building) and radio mast
- Services area including bins, irrigation tanks
- Western Power infrastructure
- Fire pumps and tanks
- Welcome Place outdoor plaza
- Tram shelter
- Onsite roads consisting of:
 - Public road – short section from Drumpellier Drive to Whiteman Park entrance
 - Internal driveways
 - Internal access roads
 - Service roads
- Onsite carparking
- Pedestrian shared path (PSP) – footpaths
- Underpass to eastern side of Drumpellier Drive
- Onsite landscaping and drainage
- Metronet railway track, and associated batters (not included in this DA)
 - Railway is on a viaduct at the station, that is raised above ground level
 - The railway returns to grade to the south of the station and to the north of the public access road
- Drumpellier Drive and Youle-Dean Road modification works to accommodate new entrance road (not included in this DA)
- The PTA maintenance access track providing vehicular access along the western side of the railway throughout Whiteman Park, to north and south of station (not included in this DA)

The project area extends around the station development, including the carpark and the Signalling Equipment Room building, as shown in Figure 2. The construction of the railway line, the modification of Drumpellier Drive and the creation of the PTA maintenance access track, are all parts of separate work packages and not part of this development application. It has been assumed as part of this BMP that both the railway construction and Drumpellier Drive upgrade will be completed

prior to occupancy.

The station will be operated by PTA and is manned at all times that it is open to the public.

Vehicular access to the station for the public, is via the main entrance off Drumpellier Drive onto Whiteman Drive East and into an internal driveway to the carpark and Kiss and Ride, with buses able to enter the bus interchange via another entrance also from Whiteman Drive East. A service road provides access to the Signalling Equipment Room located to the north.

The main entrance road to the carpark entrance road, is a public road that extends from Drumpellier Drive to the Whiteman Park entrance (see Figure 2). There are four private driveway connections to this road, including two that extend from the round-about in the centre of this public road.

The remainder of the roads within the project area are all considered private driveways including:

- the internal carpark roads including the Kiss 'n' Ride turnaround loop
- the bus interchange driveway
- the service road from the bus interchange driveway to the DFES booster connection and firewater pumps/tanks
- the service road to the Signalling Equipment Room (SER)
- the PTA maintenance access track (not included in this DA) however provisions for connections are to be made from the driveways near the SER and within the southern carpark.

Given the nature of the facility, this station has its own onsite fire hydrant system which consists of dedicated fire water tanks, pump room and booster connection. Emergency management provisions, including evacuation, is expected to be conducted in accordance with the PTA Emergency Management Manual (EMM). Linfire note that while the PTA EMM details the response to a variety of onsite emergencies, including station fires, there isn't any specific information in the EMM relating to bushfire emergencies, which may require different responses and evacuation protocols to other emergencies. As outlined in Section 1.4, it is proposed that bushfire emergency management measures be incorporated into the PTA EMM to satisfy bushfire policy requirements.

1.2 Site description

The project area extends around the overall development boundary for this development application, as shown in Figure 2, and is surrounded by:

- remnant bushland and previously cleared land, to the north within Whiteman Park, with Drumpellier Drive and Whiteman Edge development further to the north-east
- Drumpellier Drive and Isoodon Street to the east, with a large median strip between them, with remnant bushland further east of Isoodon Street
- Grazed pastureland to the south, with Drumpellier Drive slightly further to the east
- remnant bushland within Whiteman Park to the west

The project area is largely cleared as part of the current development that exists on the site. The existing road access is to be reconfigured as part of this development, with Whiteman Drive East to be pushed further north, to accommodate the new station.

1.3 Habitable buildings and assets

Review of the proposed development has identified the following proposed habitable buildings and assets that Linfire consider require protection from bushfire impact:

- Station building (largely beneath the main station canopy) on both the raised platform level and lower concourse level.

- Lift lobby building located immediately south of the main station canopy
- Crib/UAT building within the bus interchange loop
- The Signalling Equipment Room located to the north of the main station

The various buildings and assets are depicted on Figures 1 and 2..

1.4 Purpose

The project area contains proposed habitable development located within a designated bush fire prone area that is subject to a BAL rating above BAL-Low. On this basis, this Bushfire Management Plan (BMP) has been prepared to address requirements under Policy Measures 6.2 and 6.5 of *State Planning Policy 3.7 Planning in Bushfire-Prone Areas* (SPP 3.7; WAPC 2015) and *Guidelines for Planning in Bushfire-Prone Areas* (the Guidelines; WAPC 2017).

The proposed development is considered to be a vulnerable land use which triggers additional requirements under Policy Measure 6.6 of SPP 3.7. In accordance with Policy Measure 6.6.1 and Section 5.5 of the Guidelines, development applications for vulnerable land uses require a Bushfire Emergency Evacuation Plan (BEEP) detailing the emergency management provisions for the facility, accompanies the BMP.

For this project, it is proposed that a BEEP is not prepared at this time, but is included as a future implementation measure within this BMP and conditioned as part of the DA approval. Linfire consider the most appropriate approach is to have the proposed bushfire emergency management arrangements for this station be incorporated into the existing PTA EMM to standardise the procedures. To achieve this, there is a significant liaison process required with PTA, which given occupation of the station by vulnerable occupants (i.e the public) isn't likely until 2024, there is considerable time to define these bushfire emergency management arrangements. This BMP will provide some guidance about the overall strategy, to provide decision-makers some information regarding the anticipated emergency management measures. Notwithstanding, a standalone BEEP for the station may still be an option if this is PTA's preference, however it should be aligned and referenced in the EMM.

1.5 Other plans/reports

There are no known bushfire or assessments that have been prepared previously for the project area.

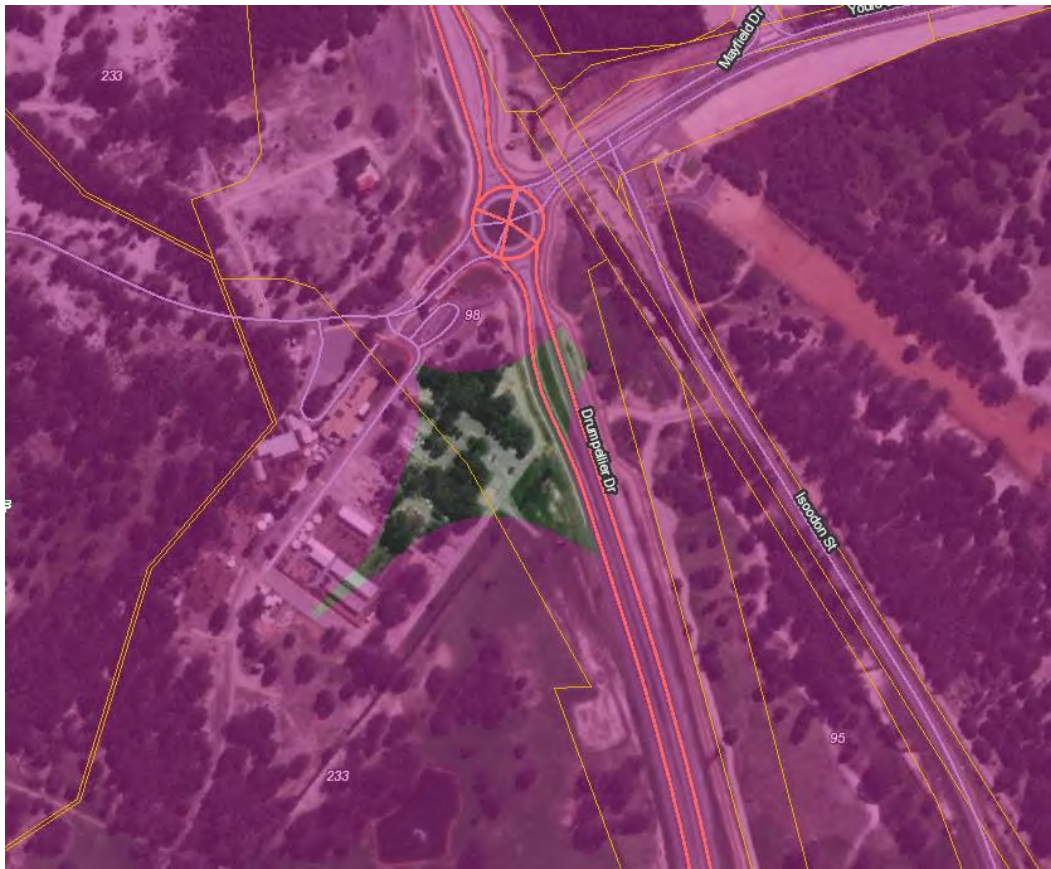


Plate 1: Map of Bush Fire Prone Areas (DFES 2021)

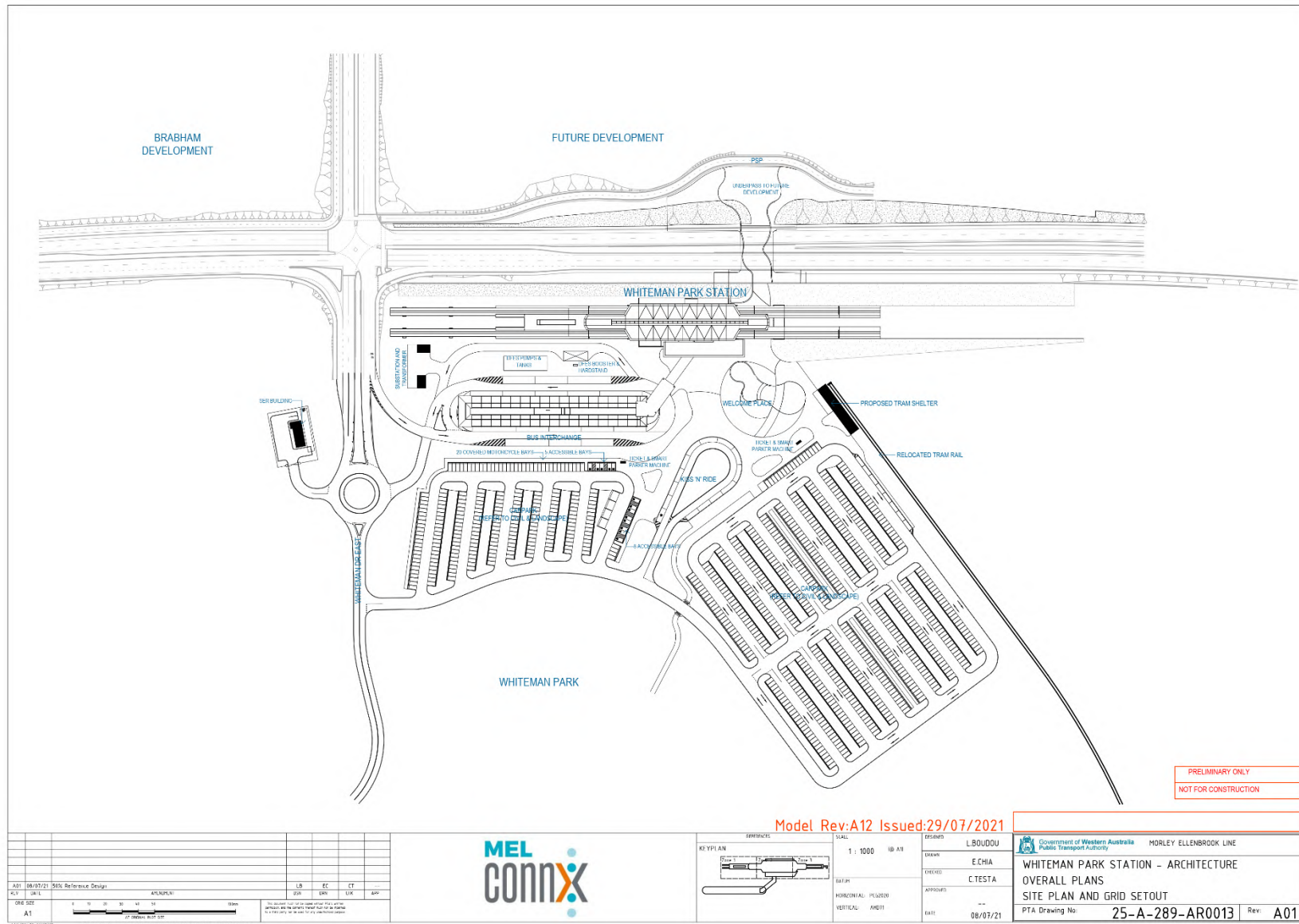
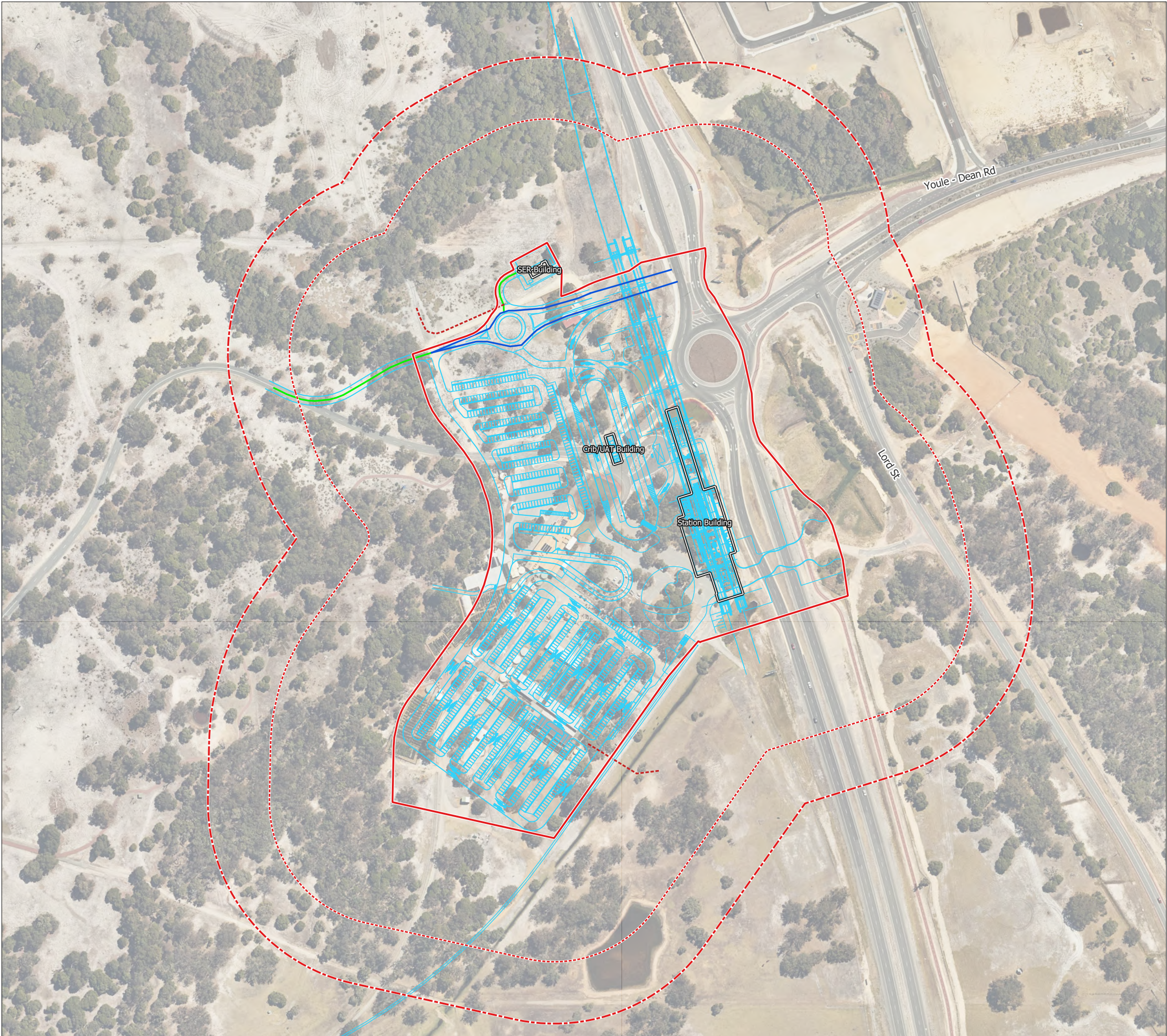
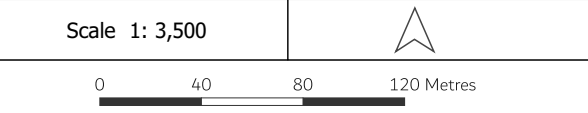


Figure 1: Development Plan



- Legend
- Proposed Development
 - Project Area
 - 100m Assessment Area
 - 150m Assessment Area
 - Building Outline
 - Private Driveway
 - Public Road
 - PTA Maintenance Access





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Metronet: Whiteman Park Station

Figure 2: Site Overview

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2.0 Environmental considerations

2.1 Native vegetation - modification and clearing

The project area has largely been cleared of native vegetation as part of existing development, however some small plots of remnant vegetation may require clearing as part of the proposal. Table 1 provides a summary of a search of free publicly available environmental data.

Linfire understand all environmental impacts resulting from implementation of the proposal, if any, will be addressed under standard State and Federal environmental assessment and referral requirements under the Environmental Protection Act 1986 and Environment Protection and Biodiversity Conservation Act 1999.

Table 1: Summary of environmental values

Environmental value	Not mapped as occurring within or adjacent to the project area	Mapped as occurring within or adjacent to the project area		Description
		Within	Adjacent	
Environmentally Sensitive Area		✓	✓	An Environmentally Sensitive Area have been identified within, and adjacent, to the project area, in the land west of Drumpellier Drive
Swan Bioplan Regionally Significant Natural Area	✓			No Regionally Significant Natural Areas were identified.
Ecological linkages	N/A	N/A	N/A	This layer not publicly available at the time of document preparation.
Wetlands		✓	✓	A Conservation Category wetland has been identified to the west of the project area, with a Multiple Use wetland located along the southern boundary and another to the north of the site. Resource Enhancement wetlands are located to the north, west and east of the project area. located over the eastern portion of the project area. No Ramsar sites are mapped as occurring within or adjacent to the project area.
Waterways	✓			No waterways or lakes within or adjacent to the project site. During the inspection, a local waterway was noted to the west of the project area and a small dam in agricultural land to the south.

Environmental value	Not mapped as occurring within or adjacent to the project area	Mapped as occurring within or adjacent to the project area		Description
		Within	Adjacent	
Threatened Ecological Communities listed under the EPBC Act		✓	✓	National Map shows the project area and the surrounding area as containing Threatened Ecological Communities.
Threatened and priority flora	N/A	N/A	N/A	This layer not publicly available at the time of document preparation.
Fauna habitat listed under the EPBC Act			✓	Land within the project area is mapped as being a potential roosting area for endangered Carnaby's Black Cockatoo, and also an area requiring investigation for feeding habitat. The project area shows no potential Western Ringtail Possum habitat.
Threatened and priority fauna	N/A	N/A	N/A	This layer not available at the time of document preparation.
Bush Forever Site		✓	✓	Bush Forever site 304 is located within the project area and across land to the north, south and west of the site
DBCA managed lands and waters (includes legislated lands and waters and lands of interest)	✓			No DBCA managed or legislated land and waters were identified within or adjacent to the project area.
Conservation covenants	✓			No information has been provided by the client regarding Conservation Covenants.
Aboriginal Heritage			✓	Land adjacent to the project area, namely the west and north, are mapped as being a Register Aboriginal Sites.
Crown Reserves	✓			No Crown Reserves were identified within or adjacent to the project area.

2.2 Revegetation and Landscaping

The proposed development is to include a combination of proposed revegetation and onsite managed landscaping as part of the proposal. The landscaping strategy for the project area is to include the following treatments:

- Asset Protection Zones (APZs) are to be implemented around nominated buildings, to the dimensions detailed in this BMP, and complying with the APZ standards from the Guidelines (see Schedule 1 in Appendix 2).
- Outside the APZs, the managed landscaping within the main station development area is to consist of either non-vegetated elements or low threat landscaping in accordance with AS 3959—2018 Clauses 2.2.3.2 (e) and (f).
 - landscaping beneath the viaduct, that is outside nominated APZs, is to be low threat vegetation compliant with AS 3959 Clause 2.2.3.2 (f).
 - landscaping within the carpark and, along the roads and around the proposed station is to be low threat vegetation compliant with AS 3959 Clause 2.2.3.2 (f).
 - landscaping surrounding the proposed pedestrian underpass is to be low threat vegetation compliant with AS 3959 Clause 2.2.3.2 (f).
- proposed landscaping along the western and south-western interfaces of the carpark is assumed will likely return to a Class A forest vegetation structure over time given the connection to Whiteman Park.

Linfire understand that there will be no unmanaged vegetation (classified vegetation) along the rail alignment, within 150 m of the project area. As such, the proposed rail alignment has been excluded from classification on the basis it will be non-vegetated or managed as low threat vegetation.

3.0 Bushfire assessment results

3.1 Assessment inputs

3.1.1 Vegetation classification

Linfire assessed classified vegetation and exclusions within 150 m of the project area through on-ground verification on 26 May 2021 in accordance with AS 3959—2018 *Construction of Buildings in Bushfire-Prone Areas* (AS 3959; SA 2018) and the *Visual Guide for Bushfire Risk Assessment in Western Australia* (DoP 2016). Georeferenced site photos and a description of the vegetation classifications and exclusions are depicted in Figure 3 and Table 2.

The following vegetation classifications were identified during the site inspection within the project area and adjacent 150 m assessment area:

- Class A forest
 - Occurs extensively to the north, south and west of the project area within Whiteman Park, with mature trees (>6m high) and, multi-layer understorey vegetation.
 - Also occurs in smaller plots to the north-east, east and south-east of Drumpellier Drive.
 - Landscaping along the south-western and western boundary of the carpark is assumed to be Class A forest classification given the connection to Whiteman Park
- Class G grassland
 - Smaller plots of unmanaged grassland with isolated mature trees occur to the north and south of the project area within Whiteman Park, and also the north-east, east and south-west of Drumpellier Drive.
- Class C shrubland
 - A small plot of reeds (<2 m high) occurs within a drainage swale to the north-east of the project area, on the eastern side of Drumpellier Drive.

The project area and adjacent 150 m assessment area also contains land excluded from classification, including:

- existing non-vegetated areas and low threat vegetation including buildings, roads, managed road verge along Drumpellier Drive and other existing cleared land, has been excluded under Clauses 2.2.3.2 (e) and (f).
- areas of existing vegetation to be modified to non-vegetated areas and low threat vegetation as part of the proposed development in accordance with Clauses 2.2.3.2 (e) and (f) including:
 - creation and management of nominated APZs in a non-vegetated state or as low threat vegetation compliant with the APZ standards
 - outside of the APZs, modification of the following areas to low threat vegetation.
 - Land beneath the viaduct, outside of nominated APZs
 - Landscaping around the main station building
 - Landscaping within, and alongside, the carparks
 - Landscaping alongside the pedestrian underpass and on eastern side of Drumpellier Drive

The vegetation mapping in Figure 3 reflects the post-development outcome anticipated following

completion of the proposed station, the railway alignment construction and the surrounding road works. This includes the following:

- the railway alignment, where on-grade to the north and south of the viaduct structure, being constructed and maintained in a non-vegetated state (or low threat vegetation, however this is unlikely)
- Drumpellier Drive and Youle-Dean Road Road reserves, and Whiteman Drive East will be established and maintained as non-vegetated and low threat vegetation

3.1.2 Effective slope

Linfire assessed effective slope under classified vegetation through on-ground verification on 26 May 2021 in accordance with AS 3959. Results were cross-referenced with Landgate 5m contour data and are depicted in Table 2 and Figure 3.

Site observations indicate that land within the project area, and within the 150 m assessment area, are situated on land that is relatively flat but does have localised gentle slopes, with variation in slope beneath classified vegetation ranging from flat/upslope to less than 5° downslope in relation to the project area. On this basis, Linfire has assigned effective slopes accordingly, ranging from flat/upslope to downslope 0°-5° for the various classified vegetation plots.

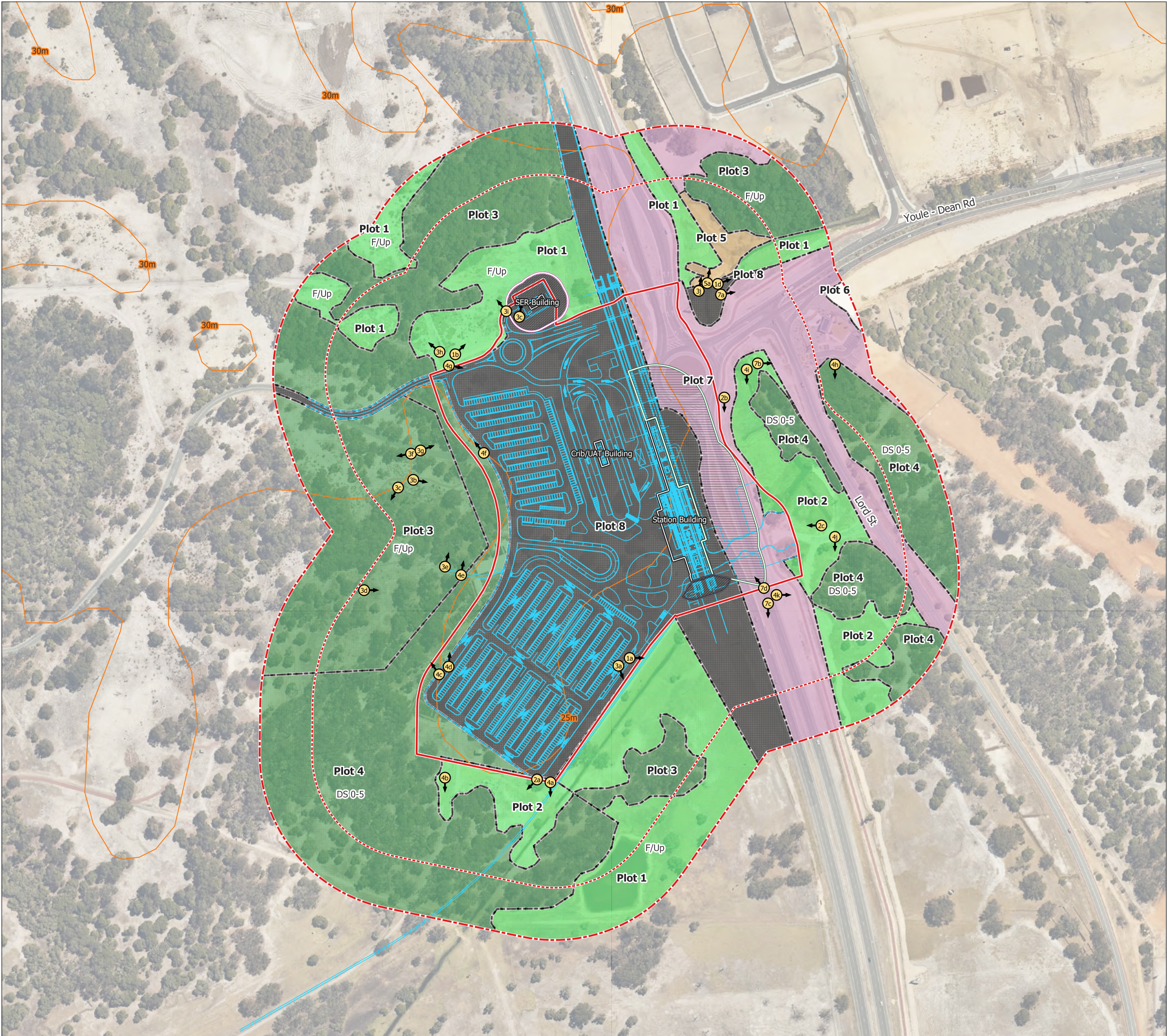
3.1.3 Summary of inputs

Table 2 illustrates the anticipated post-development vegetation classifications and exclusions following completion of development works and modification of existing vegetation to a non-vegetated or low threat state, throughout much of the project area and along the railway alignment and batters. The post-development vegetation classifications/exclusions and effective slope are summarised in Table 2.

Table 2: Post-development vegetation classifications/exclusions and effective slope

Vegetation plot	Vegetation classification	Effective slope	Comments
1	Class G Grassland	Flat/upslope (0°)	Plots of unmanaged grassland vegetation to the north, north-east and south of the project area
2	Class G Grassland	Downslope >0–5°	Small plot of grassland to the south-west of the project area with others to the east and south-east of Drumpellier Drive
3	Class A Forest	Flat/upslope (0°)	Significant plots of remnant forest vegetation to the north, west, south and north-east of the project area. Contains vegetation >6m in height, typically with multi-layered understorey.
4	Class A Forest	Downslope >0–5°	Plots of remnant forest vegetation to the south and west of the project area, including areas of proposed revegetation, with other plots to the east and south-east of Drumpellier Drive. Contains vegetation >6m in height, typically with multi-layered understorey.
5	Class C Shrubland	Downslope >0–5°	Small plot of shrubland vegetation to the north-east of the project area within drainage swale.

Vegetation plot	Vegetation classification	Effective slope	Comments
6	Excluded – Clause 2.2.3.2 [a]	N/A	Unmanaged vegetation located further than 100 m from the project area
7	Excluded – Non-vegetated and Low threat (Clause 2.2.3.2 [e] and [f])	N/A	Existing non-vegetated elements (buildings, roads etc) and low threat vegetation, adjacent to the project area
8	Excluded – Non-vegetated and Low threat (Clause 2.2.3.2 [e] and [f])	N/A	Existing classified vegetation within the project area to be modified to non-vegetated or low threat vegetation as part of the proposed development This includes the non-vegetated elements and managed landscaping within the project area, the APZs and the railway reserve. The proposed vegetation within the carpark has been excluded on the basis that it will be managed by the PTA on an ongoing basis, and the vegetation is contained in isolated



Legend

- Site Photo
- Contours
- Proposed Development
- Project Area
- 100m Assessment Area
- 150m Assessment Area
- Building Outline
- Asset Protection Zone
 - 17m
 - 21m
 - 50m
 - Vegetation Plot
- Classified Vegetation
 - A. Forest
 - C. Shrubland
 - G. Grassland
 - Excluded Clause 2.2.3.2(a)
 - Excluded Clause 2.2.3.2(e&f)
 - Modified to non vegetated and low threat

Scale 1: 3,500



0 50 100 150 Metres



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Metronet: Whiteman Park Station

Figure 3: Post-development vegetation classification and effective slope

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3.2 Assessment outputs

3.2.1 Bushfire Attack Level (BAL) contour assessment

Linfire has undertaken a BAL contour assessment in accordance with Method 1 of AS 3959 for the project area (see Figure 4). The Method 1 procedure incorporates the following factors:

- state-adopted FDI 80 rating
- vegetation classification
- effective slope
- distance maintained between proposed development areas and the classified vegetation.

The BAL rating gives an indication of the level of bushfire attack (i.e. the radiant heat flux) that may be received by proposed future development and subsequently informs the standard of building construction and/or setbacks required for proposed habitable development to potentially withstand such impacts.

The BAL contours are based on:

- the vegetation classifications and effective slope observed at the time of inspection as well as consideration of the post-development conditions resulting from proposed on-site clearing extent and vegetation management including APZ's, resultant vegetation exclusions and separation distances achieved in line with the Development Plan and Sections 2.2 and 3.1.1
- the proposed landscaping around the south-western and western extents of the carpark, likely returning to a Class A forest classification as per AS 3959, given connection to Whiteman Park
- the Proponent maintains landscaping within station development area, including beneath the viaduct, within the carpark and adjacent to the pedestrian underpass, as low threat vegetation on an ongoing basis to enable exclusion of the carpark as non-vegetated and low threat vegetation under Clauses 2.2.3.2 (e) and (f).

Should there be any changes in development design or classified vegetation extent that results in a modified BAL outcome, then the BAL contours will need to be reassessed.

The results of the BAL contour assessment are detailed in Table 3 and illustrated in Figure 4. The highest BAL applicable to the proposed buildings and elements is BAL-12.5, following implementation of the proposed Asset Protection Zones and other vegetation modification in line with the Landscaping Plan ensuring all development will be in BAL-29 or less. It is noted that the SER building could increase to BAL-29 if land to the north becomes Class A forest,

Table 3: BAL contour assessment results to proposed buildings and assets

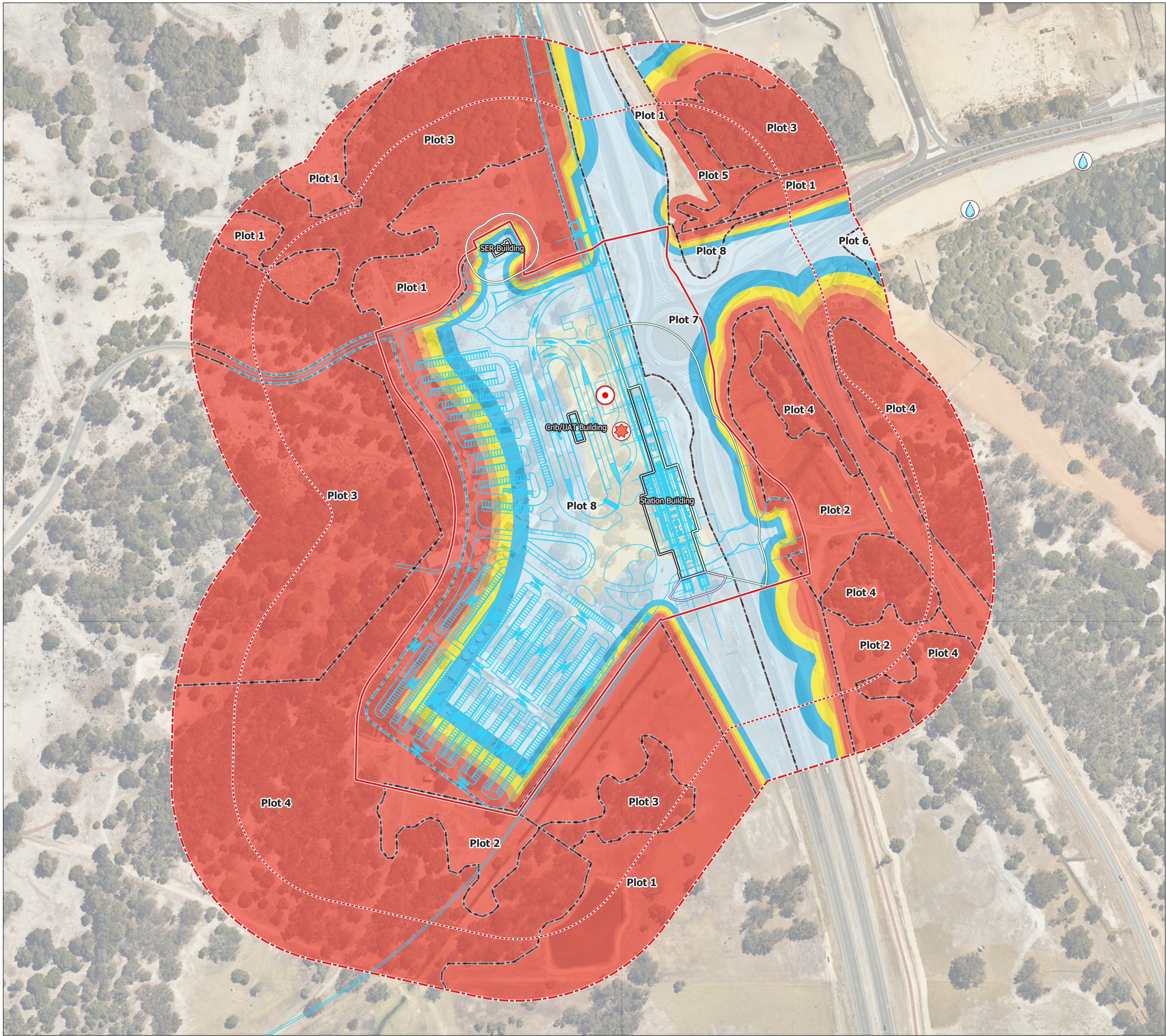
Method 1 BAL determination				
Plot	Vegetation classification	Effective slope	Separation distance	Highest BAL
1	Class G Grassland	Flat/upslope (0°)	21 m	BAL-12.5
2	Class G Grassland	Downslope >0–5°	56 m	BAL-Low
3	Class A Forest	Flat/upslope (0°)	42 m	BAL-12.5
4	Class A Forest	Downslope >0–5°	90 m	BAL-12.5
5	Class C Shrubland	Downslope >0–5°	>100 m	BAL-Low

Method 1 BAL determination				
Plot	Vegetation classification	Effective slope	Separation distance	Highest BAL
6	Excluded – Clause 2.2.3.2 [a]	N/A	N/A	BAL–Low
7	Excluded – Non-vegetated and Low threat (Clause 2.2.3.2 [e] and [f])	N/A	N/A	BAL–Low
8	Excluded – Non-vegetated and Low threat (Clause 2.2.3.2 [e] and [f])	N/A	N/A	BAL–Low

Table 4 lists the BAL applicable to each building or element within the proposed development.

Table 4: BAL applicable to each building/element

Building / element	Initial BAL (no management)	Proposed vegetation management	Revised BAL
Station building	BAL–FZ	17 m -50 m variable width APZ around the building, in conjunction with onsite landscaping and revegetation and the proposed clearing along the rail alignment.	BAL–12.5
Signalling Equipment Room	BAL–FZ	21 m wide APZ around the building, in conjunction with onsite landscaping and revegetation and the proposed clearing along the rail alignment. The 21 m APZ around this building is to allow for future regrowth or revegetation of Class A forest around the building, especially from the north.	BAL–12.5
Crib/UAT Building	BAL–FZ	Onsite landscaping and revegetation and the proposed clearing along the rail alignment.	BAL–12.5



Legend

- DFES Booster
- Fire Pumps and Tanks
- Street Hydrant
- Proposed Development
- Project Area
- 100m Assessment Area
- 150m Assessment Area
- Building Outline
- Asset Protection Zone
 - 17m
 - 21m
 - 50m
- Vegetation Plot
- BAL Contours
 - BAL FZ
 - BAL 40
 - BAL 29
 - BAL 19
 - BAL 12.5
 - BAL Low

Scale 1: 3,500



0 40 80 120 Metres



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Public Transport Authority

Metronet: Whiteman Park Station

Figure 4: BAL Contour Plan

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4.0 Identification of bushfire hazard issues

4.1 Bushfire context

The project area is located on the western side of Whiteman Park, which contains primarily native forest vegetation with some previously cleared or grazed land especially to the south. In close proximity to the east of the project area is Drumpellier Drive with Whiteman Edge residential subdivision location further to the north-east. To the east and south-east is remnant grassland and forest vegetation between Drumpellier Drive and Isoodon Street, with primarily forest vegetation further to the east of Isoodon Street.

The greatest bushfire threat to the proposed development is from Whiteman Park to the west, south-west and north-west of the project area in the form of forest and grassland vegetation. Bushfires from these directions would spread to the project area on fire runs of 3-5 kilometres and would be expected to be fully-developed bushfire behaviour with elevated radiant heat and ember attack.

A bushfire approaching from the east or south-east would still be on a fire run of at least 2 km long, and would be expected to exhibit steady state bushfire behaviour through forest and grassland vegetation. Permanent separation is provided from the project area by Drumpellier Drive and the proposed railway alignment, however the impact from would still be elevated radiant heat and ember attack.

Based on the above, bushfire impact on the proposed development could be the fully-developed bushfire behaviour anticipated by AS 3959, which would result in buildings receiving elevated levels of radiant heat and ember attack, if left unmanaged.

4.2 Bushfire hazard issues

Examination of the environmental considerations (Section 2.0) and the bushfire risk assessment (Section 3.0) has identified the following bushfire hazard issues:

1. Based on the existing extent of vegetation outside proposed buildings and roads, the proposed facility is subject to an initial BAL of BAL-FZ. In order for the habitable buildings and other assets to achieve a compliant rating of BAL-29 or less, sufficient separation will be required in the form of APZs, low threat vegetation or permanent non-vegetated elements
2. Ensuring sufficient vehicular access to the proposed development, to enable egress by onsite occupants and facilitating access for fire brigade and emergency services.
3. Ensuring access to bushfire fighting water supply, to limit the travel time to water supplies for appliance refills.
4. The proposed development constitutes a vulnerable land use, primarily due to the presence of the public who may not be familiar with the facility or what to do in a bushfire emergency.

4.3 Bushfire safety strategy

The following bushfire safety strategy is proposed to demonstrate compliance with the Bushfire Protection Criteria of the Guidelines and address the bushfire hazards identified above:

1. Create sufficient separation from surrounding classified vegetation, by ensuring appropriately sized APZs are implemented around proposed buildings and asset, and comply with the APZ standards of the Guidelines. Given the importance of the station building, the decision has been made to implement an APZ to voluntarily achieve BAL-12.5 or lower.
2. Providing compliant vehicular access within, to and from the proposed development,

consisting of public roads and private driveways, to enable occupant egress and facilitate firefighter access to the project area and in particular the firewater supply.

3. Providing a secure bushfire fighting water supply by installing the proposed on-site fire hydrant system to provide hydrant coverage to the station building. Static water tanks on the hydrant system will also enable refill of bushfire fighting appliances from the fire booster connection.
4. Ensure appropriate bushfire emergency management procedures are incorporated into the overarching PTA EMM, to enable onsite staff to appropriately manage a bushfire event impacting the proposed development including:
 - a. Monitoring of forecast Fire Danger Rating during bushfire season, and Total Fire Ban Days, to anticipate bushfire risk for the next day and consider pre-emptive actions
 - b. Maintaining situational awareness during day in bushfire season by monitoring emergency services information
 - c. Emergency management procedures for bushfire events including ceasing train and bus services and evacuating the train station.

Based on the above, Linfire considers the bushfire hazards within and adjacent to project area and the associated bushfire risks are manageable through standard management responses outlined in the Guidelines. These responses will be factored into proposed development as early as possible at all stages of the planning process to ensure a suitable, compliant and effective bushfire management outcome is achieved for protection of future life, property and environmental assets.

5.0 Assessment against the bushfire protection criteria

5.1 Compliance table

An acceptable solutions assessment against the bushfire protection criteria is provided in Table 5.

Table 5: Compliance with the bushfire protection criteria of the Guidelines

Bushfire protection criteria				Development response		
Element	Intent	Performance Principle	Acceptable solutions	Method of compliance	Proposed bushfire management measures	Compliance Comment
Element 1: Location	To ensure that strategic planning proposals, subdivision and development applications are located in areas with the least possible risk of bushfire to facilitate the protection of people, property and infrastructure.	<u>Performance Principle P1</u> Development location The strategic planning proposal, subdivision and development application is located in an area where the bushfire hazard assessment is or will, on completion, be moderate or low, or a BAL-29 or below, and the risk can be managed. For unavoidable development in areas where BAL-40 or BAL-FZ applies, demonstrating that the risk can be managed to the satisfaction of the Department of Fire and Emergency Services and the decision-maker.	<u>A1.1 Development location</u> The strategic planning proposal, subdivision and development application is located in an area that is or will, on completion, be subject to either a moderate or low bushfire hazard level, or BAL-29 or below.	Acceptable Solution	The BAL contour map (see Figure 4) indicates that all proposed buildings and infrastructure can be sited in an area of BAL-29 or lower, upon completion of development and implementation of the proposed Asset Protection Zones (APZs) and other onsite landscaping, in addition to the construction of the railway line and reworking of Drumpellier Drive, Youle-Dean Road and Whiteman Drive East. The decision has been made to voluntarily achieve BAL-12.5 or lower on the station building, and the APZ around this building has been sized on this basis. The APZ around the SER building allows for future potential regrowth or revegetation of Class A forest around the building, especially from the north.	Compliance of the Performance Principle and Intent of Element 1 is achieved through compliance with Acceptable Solution A1.1
Element 2: Siting and design of development	To ensure that the siting and design of development minimises the level of bushfire impact.	<u>Performance Principle P2</u> The siting and design of the strategic planning proposal, subdivision or development application, including roads, paths and landscaping, is appropriate to the level of bushfire threat that applies to the site. That it incorporates a defendable space and significantly reduces the heat intensities at the building surface thereby minimising the bushfire risk to people, property and infrastructure, including compliance with AS 3959 if appropriate.	<u>A2.1 Asset Protection Zone (APZ)</u> Every habitable building is surrounded by, and every proposed lot can achieve, an APZ depicted on submitted plans, which meets the following requirements: Width: Measured from any external wall or supporting post or column of the proposed building, and of sufficient size to ensure the potential radiant heat impact of a bushfire does not exceed 29kW/m ² (BAL-29) in all circumstances. Location: the APZ should be contained solely within the boundaries of the lot on which the building is situated, except in instances where the neighbouring lot or lots will be managed in a low-fuel state on an ongoing basis, in perpetuity (see explanatory notes) Management: the APZ is managed in accordance with the requirements of 'Standards for Asset Protection Zones' (see Guidelines Schedule 1).	Acceptable Solution	On completion of development, the following APZs are to be implemented as non-vegetated elements or maintained low threat vegetation: - Station building: 17m to 50m wide APZ - Signal Equipment building: 21m wide APZ The APZs are to be implemented and maintained in accordance with Schedule 1 of the Guidelines (see Appendix 2). The APZ for the Station building extends east into Drumpellier Drive road reserve, which is under MRWA tenure, with the existing road verge currently being well managed in this area. It is understood that liaison with MRWA is occurring to ensure that the portion of the APZ within the road verge will be established and maintained in accordance with APZ standards, in perpetuity. In addition to the nominated APZs, the following areas are to be maintained in a non-vegetated or low threat state to ensure ongoing exclusion in accordance with AS 3959 Clauses 2.2.3.2 (e) and (f): - Land beneath the viaduct, outside of nominated APZs - Alongside the railway, including batters, within 150 m of the project area - Landscaping around the main station building - Landscaping within, and alongside, the carparks - Landscaping alongside the pedestrian underpass and on eastern side of Drumpellier Drive The establishment of the above requirements, and all ongoing management, is to be conducted in accordance with this BMP, which is enforceable under the City of Swan firebreak notice (see Appendix 4).	Compliance of the Performance Principle and Intent of Element 2 is achieved through compliance with Acceptable Solution A2.1
Element 3: Vehicular	To ensure that the vehicular access serving a	<u>Performance Principle P3</u> The internal layout, design and construction of public and private vehicular access and	<u>A3.1 Two access routes</u> Two different vehicular access routes are provided, both of which connect to the public	Acceptable Solution	The proposed public road network will provide all occupants with the option of travelling to more than two different destinations from the	Compliance of the Performance Principle and Intent of Element 2

Bushfire protection criteria				Development response		
Element	Intent	Performance Principle	Acceptable solutions	Method of compliance	Proposed bushfire management measures	Compliance Comment
access	subdivision/development is available and safe during a bushfire event.	egress in the subdivision / development allow emergency and other vehicles to move through it safely and easily.	road network, provide safe access and egress to two different destinations and are available to all residents/the public at all times and under all weather conditions.		connection to Drumpellier Drive: - providing the option of travelling south to Marshall Road where further travel is possible to the east, west or further south. - providing the option of travelling north to Gngara Road where further travel can be undertaken further north or east or west on Gngara Road. - providing the option of travelling further east on Youle-Dean Road. In this regard, the proposed development is provided with at least two access routes which meets the requirements of Acceptable Solution A3.1.	is achieved through compliance with Acceptable Solution A3.1, A3.2, A3.3, A3.5 and A3.8
			<u>A3.2 Public road</u> A public road is to meet the requirements in Table 2, Column 1.	Acceptable Solution	All public roads proposed as part of the development are to be constructed to the relevant technical requirements of the Guidelines (see Appendix 3). The existing public roads sighted whilst travelling to the site appeared compliant with public road specifications of the Guidelines and will be sufficient for emergency egress or firefighter access to the site.	
			<u>A3.3 Cul-de-sac (including a dead-end-road)</u> A cul-de-sac and/or a dead-end road should be avoided in bushfire prone areas. Where no alternative exists (i.e. the lot layout already exists and/or will need to be demonstrated by the proponent), detailed requirements will need to be achieved (refer to the Guidelines for detailed cul-de-sac requirements).	Acceptable Solution	A public road less than 200 m in length is proposed to the west of Drumpellier Drive, to the Whiteman Park entrance (see Figure 2). This road essentially continues on as Whiteman Drive East further to the west, and while it won't have a turnaround at the termination, provision to turnaround will be possible using the loop road within the carpark to the south. Additionally, there will be a roundabout within the short section of road, and on this basis, there is considered to be sufficient provision for vehicle turnaround along the public road. On this basis, other than the 17.5 m diameter turn-around head, this section of road is to be constructed to the relevant technical requirements of the Guidelines (see Appendix 3).	
			<u>A3.4 Battle-axe</u> Battle-axe access leg's should be avoided in bushfire prone areas. Where no alternative exists, (this will need to be demonstrated by the proponent) detailed requirements will need to be achieved (refer to the Guidelines for detailed battle-axe requirements).	Not applicable	No battle-axe legs are proposed as part of the development and the project area is not serviced by an existing battle-axe.	
			<u>A3.5 Private driveway longer than 50 m</u> A private driveway is to meet detailed requirements (refer to the Guidelines for detailed private driveway requirements).	Acceptable Solution	The proposed private driveways are depicted on Figure 2, and include: - the internal carpark roads including the Kiss 'n' Ride turnaround loop (note: Figure 2 doesn't highlight all internal roads within the carpark). - the bus interchange driveway - the service road from the bus interchange driveway to the DFES booster connection and firewater pumps/tanks - the service road to the Signalling Equipment Room (SER) - the PTA maintenance access track (not included in this DA) however provisions for connections are to be made from the driveways near the SER and within the southern carpark. The private driveways will be constructed in accordance with the technical requirements of the Guidelines for private driveways (see Appendix 3). Most proposed roads will exceed 6 m in width, so passing bays are not considered to be required within the project area.	

Bushfire protection criteria				Development response		
Element	Intent	Performance Principle	Acceptable solutions	Method of compliance	Proposed bushfire management measures	Compliance Comment
					Similarly compliant turning arrangements are provided for all driveway dead-ends which are generally configured as loop roads	
			<u>A3.6 Emergency access way</u> An access way that does not provide through access to a public road is to be avoided in bushfire prone areas. Where no alternative exists (this will need to be demonstrated by the proponent), an emergency access way is to be provided as an alternative link to a public road during emergencies. An emergency access way is to meet detailed requirements (refer to the Guidelines for detailed EAW requirements).	Not applicable	The proposed development does not require Emergency Access Ways (EAWs) to provide through access to a public road.	
			<u>A3.7 Fire service access routes (perimeter roads)</u> Fire service access routes are to be established to provide access within and around the edge of the subdivision and related development to provide direct access to bushfire prone areas for fire fighters and link between public road networks for firefighting purposes. Fire service access routes are to meet detailed requirements (refer to the Guidelines for detailed fire service access route requirements).	Not applicable	The proposed development does not require fire service access routes (FSARs) to achieve access within and around the perimeter of the project area.	
			<u>A3.8 Firebreak width</u> Lots greater than 0.5 hectares must have an internal perimeter firebreak of a minimum width of three metres or to the level as prescribed in the local firebreak notice issued by the local government.	Acceptable Solution	On completion of development, the project area will be developed with non-vegetated surfaces, cleared land and low threat landscaping with some revegetation along the western and southern project area extents. Given the public road and private driveway network provides sufficient access to the perimeter of the development, perimeter firebreaks are not considered to be required around the project area. Access to the railway is to be provided by the PTA maintenance access track, which will also connect to the existing internal Whiteman Park access tracks. The PTA maintenance access track will connect into the proposed development at two locations, as depicted on Figure 2, to enable emergency services to enter or exit this access route. It is understood that the PTA maintenance access track is to be constructed in accordance with the private driveway standards, which would exceed the requirements of the City of Swan firebreak notice (see Appendix 4).	

Bushfire protection criteria				Development response		
Element	Intent	Performance Principle	Acceptable solutions	Method of compliance	Proposed bushfire management measures	Compliance Comment
Element 4: Water	To ensure that water is available to the subdivision, development or land use to enable people, property and infrastructure to be defended from bushfire.	<u>Performance Principle P4</u> The subdivision, development or land use is provided with a permanent and secure water supply that is sufficient for firefighting purposes.	<u>A4.1 Reticulated areas</u> The subdivision, development or land use is provided with a reticulated water supply in accordance with the specifications of the relevant water supply authority and Department of Fire and Emergency Services.	Not applicable	The proposed development is not located within an existing reticulated area, however a Water Corporation town main is to be extended to the project area to provide water supply to the development. At this stage it is not clear whether street hydrants will also be installed on the new main, and as such this has not been relied upon to achieve compliance with A4.1. The nearest existing street hydrants are located Youle-Dean Road, approximately 350 m from the project area. Whilst the project area is located near these street hydrants, the main bushfire fighting water supply is likely to be accessed from the dedicated onsite fire hydrant system detailed below in A4.2 below.	Compliance of the Performance Principle and Intent of Element 4 is achieved through compliance with Acceptable Solution A4.2
			<u>A4.2 Non-reticulated areas</u> Water tanks for firefighting purposes with a hydrant or standpipe are provided and meet detailed requirements (refer to the Guidelines for detailed requirements for non-reticulated areas).	Acceptable Solution	The proposed development is to have an on-site fire hydrant system, designed, installed and maintained in accordance with the National Construction Code and relevant Australian Standards. The fire hydrant system is expected to include dedicated firewater storage tanks, duty/standby pumpset and booster connection located between the main station building and the bus interchange. Onsite fire hydrants are sited throughout the development provide attending fire fighters with fire hydrant coverage of the station building, including the platform and concourse levels. Given the onsite water storage (and infill) associated with the proposed wet fire systems, the addition of an extra 50 kL to the proposed storage capacity for bushfire fighting purposes is considered appropriate. This static water supply will be available for attending firefighters from the firewater storage tanks, via the booster connection. Appliance access to the booster connection, and turnaround, will be achieved using the loop service road that connects to the bus interchange road. The firewater tank/s are to be installed, filled and maintained for the life of the project by the Proponent.	
			<u>A4.3 Individual lots within non-reticulated areas (Only for use if creating 1 additional lot and cannot be applied cumulatively)</u> Single lots above 500 m ² need a dedicated static water supply on the lot that has the effective capacity of 10,000 L.	Not applicable	The proposed development is being addressed in accordance with A4.2	

5.2 Additional management strategies

Linfire makes the following additional bushfire management recommendations to inform ongoing planning stages of the development and increase the level of bushfire risk mitigation across the site.

5.2.1 Onsite landscaping and revegetation

The BAL contour assessment is reliant on all landscaping and revegetation being implemented and maintained in accordance with the standards detailed in Section 3.1.1 and depicted on Figure 3.

The following APZs are to be implemented and maintained as non-vegetated elements or maintained low threat vegetation in accordance with Schedule 1 of the Guidelines (see Appendix 2):

- Station building: 17m to 50m wide APZ
- Signal Equipment building: 21m wide APZ

Outside the nominated APZs, the following areas are to be established and maintained in a non-vegetated or low threat state in perpetuity, by the Proponent, to ensure ongoing exclusion in accordance with AS 3959 Clauses 2.2.3.2 (e) and (f):

- Land beneath the viaduct, outside of nominated APZs
- Alongside the railway, including batters, within 150 m of the project area
- Landscaping around the main station building
- Landscaping within, and alongside, the carparks
- Landscaping alongside the pedestrian underpass and on eastern side of Drumpellier Drive

The establishment of the above requirements, and all ongoing management, is to be conducted in accordance with this BMP, which is enforceable under the City of Swan firebreak notice (see Appendix 4).

5.2.2 Road verge fuel management

Existing and proposed public road verges that have been excluded as low threat are to be managed to ensure they remain in a low threat, minimal fuel condition in accordance with Clause 2.2.3.2 (f) of AS 3959.

The APZ for the Station building extends onto Drumpellier Drive road reserve, which is under MRWA tenure. The existing road verge currently being well managed as low threat vegetation, however it is understood that liaison with MRWA is occurring to ensure that the portion of the APZ within the road verge will be established and maintained in accordance with APZ standards, in perpetuity, either by MRWA or PTA.

Ongoing management of proposed onsite road verges is the responsibility of the Proponent, until handed over to the City, with management of any existing road verges to continue to be the responsibility of the City.

5.2.3 Building construction standards

The proposed development does not include any Class 1, 2, or 3 residential buildings and associated Class 10a structures, and as such, there is no statutory requirement for proposed buildings to meet the construction requirements of AS 3959.

The main station building is to implement a suitably sized APZ to voluntarily achieve BAL-12.5 or lower, which further reduces the potential bushfire impact in this building to minor radiant heat and ember attack. The Proponent has agreed to review the construction of the station building, and where practical for a building of this nature, incorporate AS 3959 BAL-12.5 construction measures.

5.2.4 Staging of access

If development (and therefore construction of vehicular access) is to occur on a staged basis, vehicular access arrangements will need to ensure that all occupiers and visitors are provided with compliant access at all stages. This can be achieved via construction of access in advance of stages or through provision of temporary access should it be required.

5.2.5 Vulnerable land use and recommended development condition

The proposed development constitutes a vulnerable land use. On this basis, a Bushfire Emergency Evacuation Plan (BEEP) is required to address the requirements of Policy Measure 6.6.1 of SPP 3.7.

The preference is that the BEEP is not prepared at this time, but is included as a future implementation measure within this BMP and conditioned as part of the DA approval. Instead of producing a standalone BEEP for the station, the ideal approach is to incorporate the proposed bushfire emergency management arrangements for this station into the existing PTA Emergency Management Manual (EMM) to standardise the procedures. To achieve this, there is a significant liaison process to be undertaken with PTA, and given occupation of the station by vulnerable occupants (i.e the public) is to be in 2024, there is considerable time to define these arrangements.

Based on the above, the following is proposed:

- The preparation, endorsement, and implementation of the bushfire emergency management arrangements (preferably within the PTA EMM) is specifically nominated as a condition of development approval (see Section 5.2.5.1)
- The bushfire emergency management arrangements consider the proposed philosophies outlined in Section 5.2.5.2, which have been included to provide some guidance about the overall strategy.

5.2.5.1 Recommended development condition

The following condition is recommended for the development application approval (subject to WAPC wording):

Bushfire emergency management procedures, detailing the management of vulnerable occupants at the proposed station, is to be prepared, endorsed by WAPC and implemented prior to occupation by any vulnerable occupants (i.e. the public). The proposed emergency management procedures will preferably be incorporated into the overarching PTA Emergency Management Manual (EMM) as standardised procedures, however it may also be documented within a standalone BEEP for the station that is aligned with the EMM.

5.2.5.2 Indicative Bushfire Emergency Management Procedures

It is expected that the bushfire emergency management procedures or arrangements would consider the following, to be incorporated into the PTA EMM (or a standalone BEEP that aligns with the EMM):

- Monitor the forecast Fire Danger Rating (FDR) each day (at 4pm) to enable consideration of any pre-emptive actions including
 - Heighten alertness for staff and public, including warnings when FDR is

Extreme or Catastrophic

- Consider adding extra staff to manage a bushfire emergency
- Buses on standby for evacuation
- DFES liaison
- Consider similar pre-emptive actions to the above, when a Total Fire Ban is declared and ensure no hot works or no other activities that may start a fire are conducted.
- Monitor emergency services information during the day (especially during bushfire season or days with elevated FDR) and conduct regular visual assessments, to maintain situation awareness during these days.
- Consider triggers for:
 - Alerting DFES
 - Ceasing train and bus services to train stations
 - Evacuating train station
 - This above would likely be station specific triggers
- Consider using Transperth buses for offsite evacuation of occupants
- Otherwise utilising the existing relevant PTA emergency management procedures and infrastructure as much as possible from the EMM, to manage bushfire emergencies.
- Ensure sufficient training for staff and regular exercise drills are conducted

5.2.6 BAL compliance and/or BAL assessment report

A BAL compliance and/or BAL assessment report may be prepared at the discretion of the Shire following completion of construction works and prior to issue of certificate of occupancy to validate and confirm the accuracy of the BAL contour assessment.

5.2.7 Compliance with annual firebreak notice

The Proponent or landowner is to comply with the current City of Swan annual firebreak notice as amended (refer Appendix 4).

6.0 Responsibilities for implementation and management of the bushfire measures

Implementation of the BMP applies to the Proponent (landowner, facility manager) and the City to ensure bushfire management measures are adopted and implemented on an ongoing basis. A bushfire responsibilities table is provided in Table 6 to drive implementation of all bushfire management works associated with this BMP.

Table 6: Responsibilities for implementation and management of the bushfire measures

Implementation/management table	
<i>Decision maker – prior to development occupation</i>	
No.	Implementation action
1	Condition the preparation of the Bushfire Emergency Management Procedures for the station prior to occupation as part of the development approval
<i>Proponent – prior to development occupation</i>	
No.	Implementation action
1	Establish the on-site Asset Protection Zone (APZ) around nominated buildings and infrastructure assets to the dimensions and standards stated in the BMP and Appendix 2. Continue liaison with MRWA to ensure that the portion of the APZ extending onto Drumpellier Drive road reserve is established in accordance with the APZ standards.
2	Establish low threat landscaping throughout the project area in accordance with the standards outlined in the BMP including the following areas: - Land beneath the viaduct, outside of nominated APZs - Alongside the railway, including batters, within 150 m of the project area - Landscaping around the main station building - Landscaping within, and alongside, the carparks - Landscaping alongside the pedestrian underpass and on eastern side of Drumpellier Drive
3	Install the public road private driveway network within the project area to the relevant technical requirements under the Guidelines (refer to Appendix 3)
4	Construct proposed onsite fire hydrant system for the proposed development, including the additional 50 kL firewater capacity in the tanks for bushfire fighting purposes as stated in this BMP.
5	Implement AS3959 BAL-12.5 construction measures for the main station building, where practical for a building of this nature.
6	Develop the Bushfire Emergency Management Procedures for the station, ideally incorporated into the PTA EMM, as documented in this BMP
7	If development is staged, ensure that all occupiers and visitors are provided with compliant access at all stages.
8	Comply with the City of Swan annual firebreak notice issued under s33 of the Bush Fires Act 1954.
9	If required by the City, individual BAL assessment prior to issuing of building permits.
<i>Proponent – ongoing</i>	
No.	Implementation action
1	Maintain the Asset Protection Zones (APZs) around the nominated buildings and assets to the dimensions and standards stated in the BMP and Appendix 2, including the portion within the Drumpellier Drive unless MRWA agree to maintain this portion of APZ on behalf of PTA.
2	Maintain low threat landscaping throughout the project area in accordance with the standards outlined in the BMP and the Landscaping Plan, including management of vegetation within the carpark as low threat vegetation.

Implementation/management table	
3	Maintain the public roads and private driveways to the standards stated in the BMP.
4	Maintain the onsite fire hydrant system in accordance with relevant Australian Standards and the standard stated in the BMP.
5	Conduct ongoing review of the Bushfire Emergency Management Procedures to ensure they remain appropriate to the facility
6	Comply with the City of Swan annual firebreak notice issued under s33 of the Bush Fires Act 1954.
<i>Local government – ongoing management</i>	
<i>No.</i>	<i>Implementation action</i>
1	Maintain road verges in a low threat minimal fuel condition as per Clause 2.2.3.2 (f) of AS 3959.

7.0 References

Department of Fire and Emergency Services (DFES) 2021, *Map of Bush Fire Prone Areas*, [Online], Government of Western Australia, available from:

<https://maps.slip.wa.gov.au/landgate/bushfireprone/>,.

Department of Planning (DoP) 2016, *Visual guide for bushfire risk assessment in Western Australia*, Department of Planning, Perth.

Standards Australia (SA) 2018, *Australian Standard AS 3959–2018 Construction of Buildings in Bushfire-prone Areas*, Standards Australia, Sydney.

Western Australian Planning Commission (WAPC) 2015, *State Planning Policy 3.7 Planning in Bushfire Prone Areas*, Western Australian Planning Commission, Perth.

Western Australian Planning Commission (WAPC) 2017, *Guidelines for Planning in Bushfire Prone Areas*, Version 1.3 August 2017, Western Australian Planning Commission, Perth.

Appendix 1: Vegetation plot photos and description



Photo ID: 1a



Photo ID: 1b

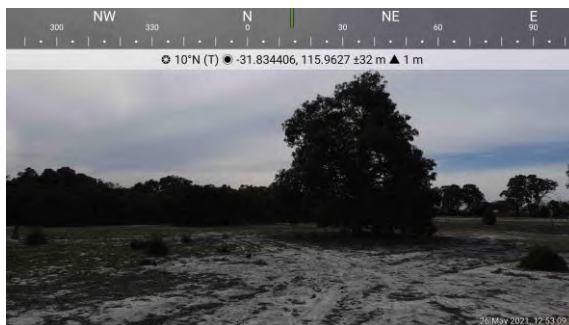


Photo ID: 1c



Photo ID: 1d

Plot number		Plot 1
Vegetation classification	Pre-development	Class G Grassland
	Post-development	Class G Grassland
Description / justification		Grassland greater than 100 mm in height



Photo ID: 2a



Photo ID: 2b



Photo ID: 2c

Plot number		Plot 1
Vegetation classification	Pre-development	Class G Grassland
	Post-development	Class G Grassland
Description / justification		Grassland greater than 100 mm in height



Photo ID: 3a



Photo ID: 3b



Photo ID: 3c

Plot number		Plot 3
Vegetation classification	Pre-development	Class A Forest
	Post-development	Class A Forest
Description / justification		Trees 10-30 m high at maturity, dominated by Eucalypts, multi-tiered structure comprising tall canopy layer, shrubby middle layer and grass/herb/sedge understorey



Photo ID: 3d



Photo ID: 3e

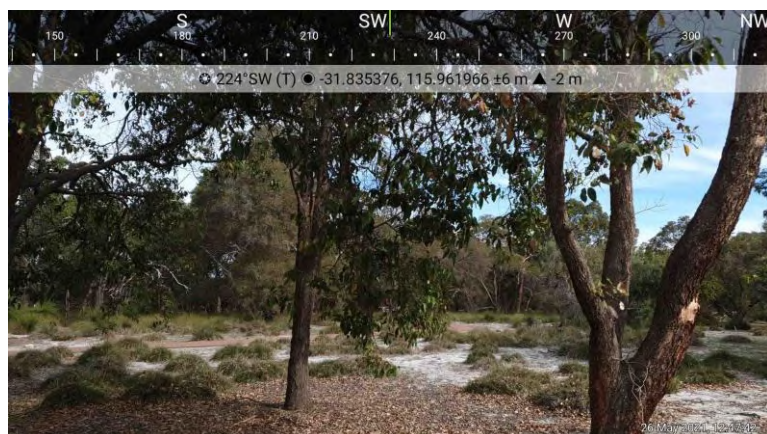


Photo ID: 3f

Plot number		Plot 3
Vegetation classification	Pre-development	Class A Forest
	Post-development	Class A Forest
Description / justification		Trees 10-30 m high at maturity, dominated by Eucalypts, multi-tiered structure comprising tall canopy layer, shrubby middle layer and grass/herb/sedge understorey



Photo ID: 3g

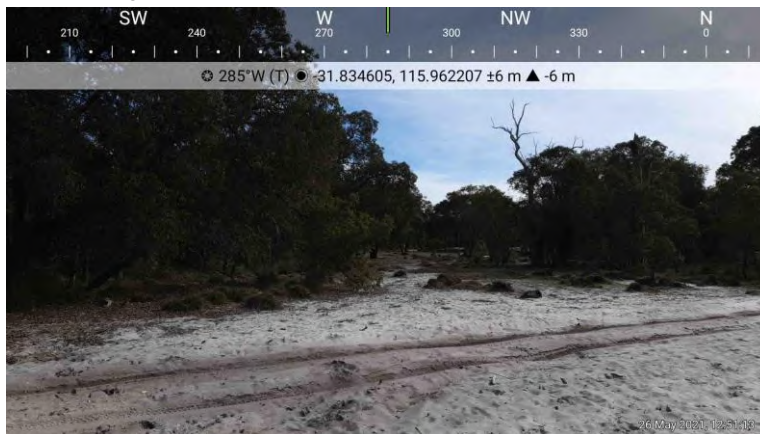


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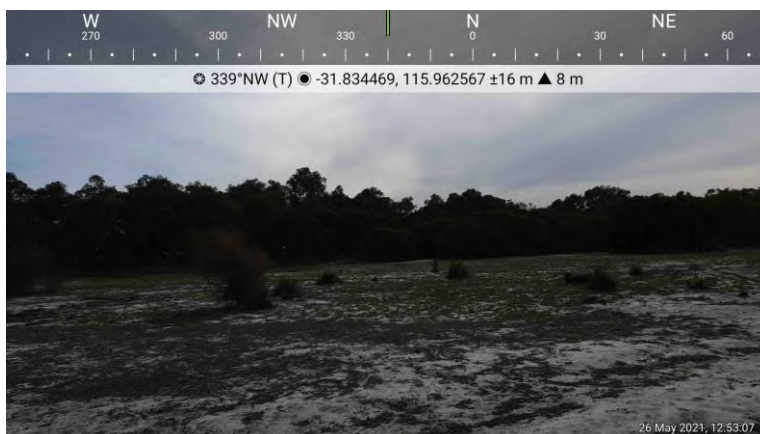


Photo ID: 3i

Plot number		Plot 3
Vegetation classification	Pre-development	Class A Forest
	Post-development	Class A Forest
Description / justification		Trees 10-30 m high at maturity, dominated by Eucalypts, multi-tiered structure comprising tall canopy layer, shrubby middle layer and grass/herb/sedge understorey



Photo ID: 3j

Plot number		Plot 3
Vegetation classification	Pre-development	Class A Forest
	Post-development	Class A Forest
Description / justification		Trees 10-30 m high at maturity, dominated by Eucalypts, multi-tiered structure comprising tall canopy layer, shrubby middle layer and grass/herb/sedge understorey



Photo ID: 4a



Photo ID: 4b



Photo ID: 4c

Plot number		Plot 4
Vegetation classification	Pre-development	Class A Forest
	Post-development	Class A Forest
Description / justification		Trees 10-30 m high at maturity, dominated by Eucalypts, multi-tiered structure comprising tall canopy layer, shrubby middle layer and grass/herb/sedge understorey



Photo ID: 4d



Photo ID: 4e



Photo ID: 4f

Plot number		Plot 4
Vegetation classification	Pre-development	Class A Forest
	Post-development	Class A Forest
Description / justification		Trees 10-30 m high at maturity, dominated by Eucalypts, multi-tiered structure comprising tall canopy layer, shrubby middle layer and grass/herb/sedge understorey



Photo ID: 4g

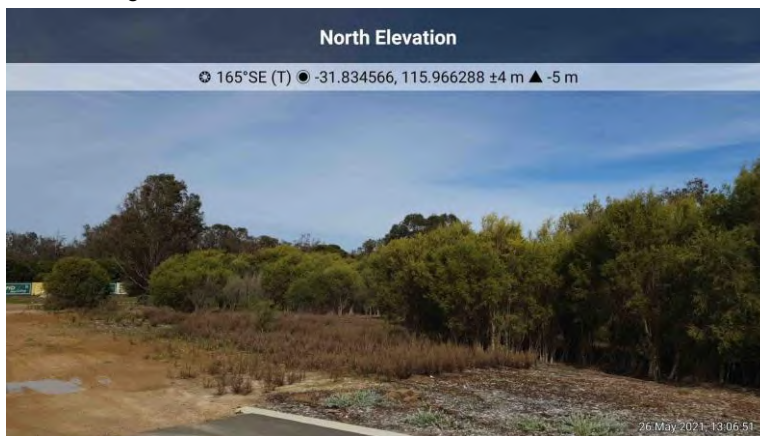


Photo ID: 4h



Photo ID: 4i

Plot number		Plot 4
Vegetation classification	Pre-development	Class A Forest
	Post-development	Class A Forest
Description / justification		Trees 10-30 m high at maturity, dominated by Eucalypts, multi-tiered structure comprising tall canopy layer, shrubby middle layer and grass/herb/sedge understorey



Photo ID: 4j

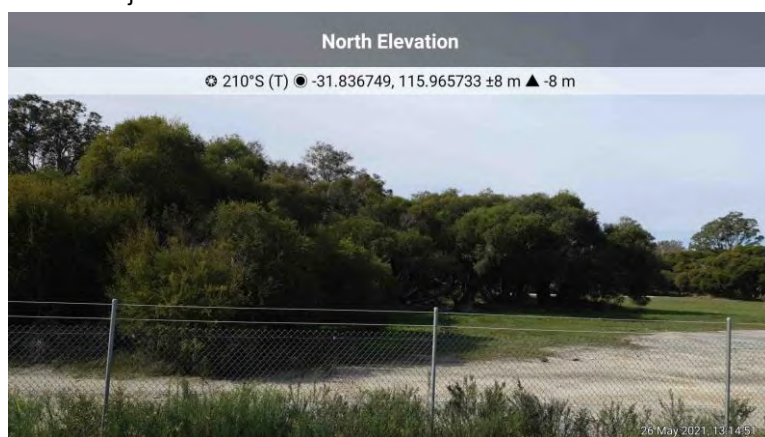


Photo ID: 4k

Plot number		Plot 4
Vegetation classification	Pre-development	Class A Forest
	Post-development	Class A Forest
Description / justification		Trees 10-30 m high at maturity, dominated by Eucalypts, multi-tiered structure comprising tall canopy layer, shrubby middle layer and grass/herb/sedge understorey

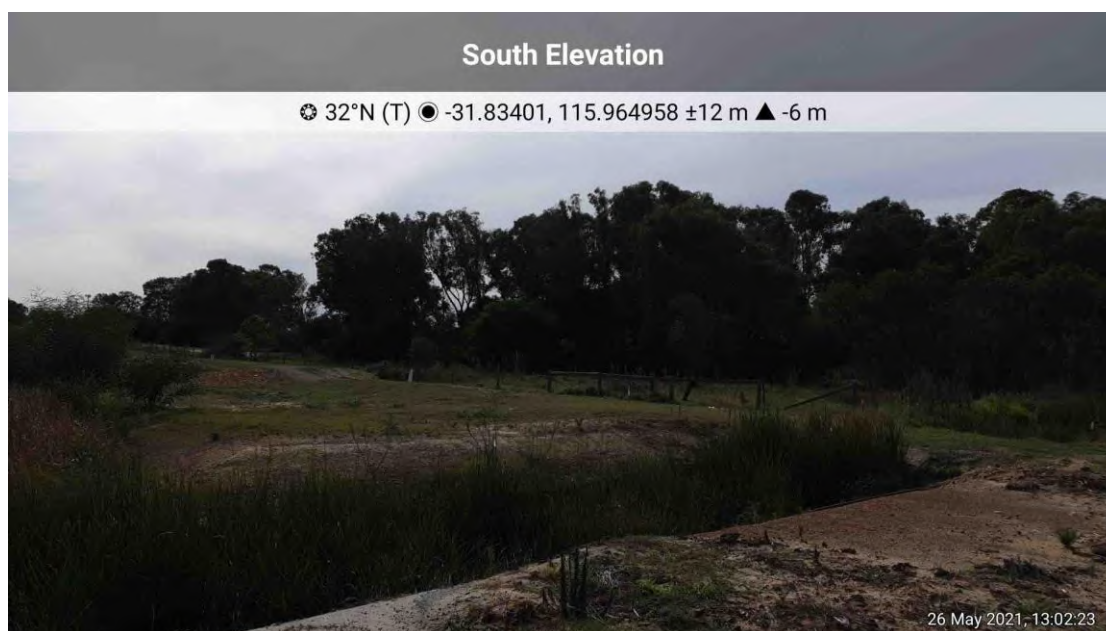


Photo ID: 5a

Plot number		Plot 5
Vegetation classification	Pre-development	Class C Shrubland
	Post-development	Class C Shrubland
Description / justification		Shrub vegetation less than 2 m high at maturity

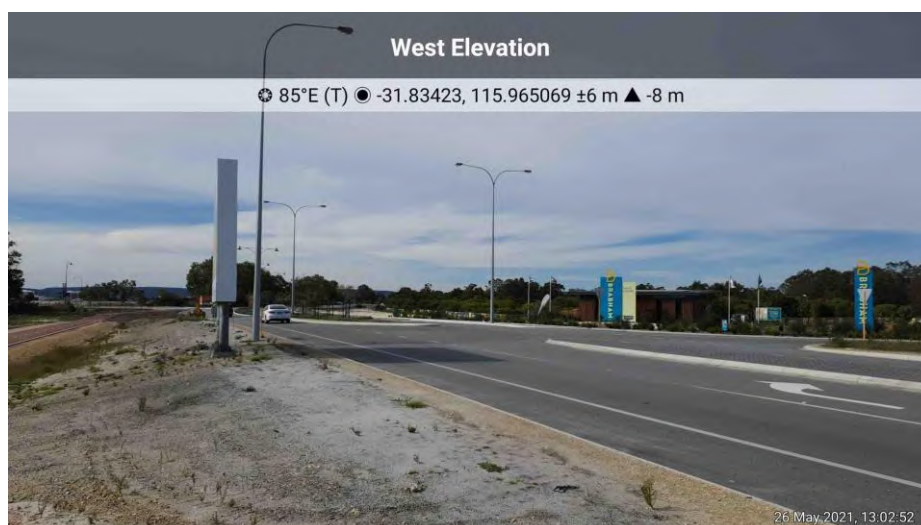


Photo ID: 7a



Photo ID: 7b

Plot number		Plot 7
Vegetation classification	Pre-development	Excluded – Non-vegetated and Low threat (Clause 2.2.3.2 [e] and [f])
	Post-development	Excluded – Non-vegetated and Low threat (Clause 2.2.3.2 [e] and [f])
Description / justification		Low threat cultivated gardens and maintained lawns within surrounding properties and non-vegetated areas including roads, footpaths, driveways and building footprints



Photo ID: 7c

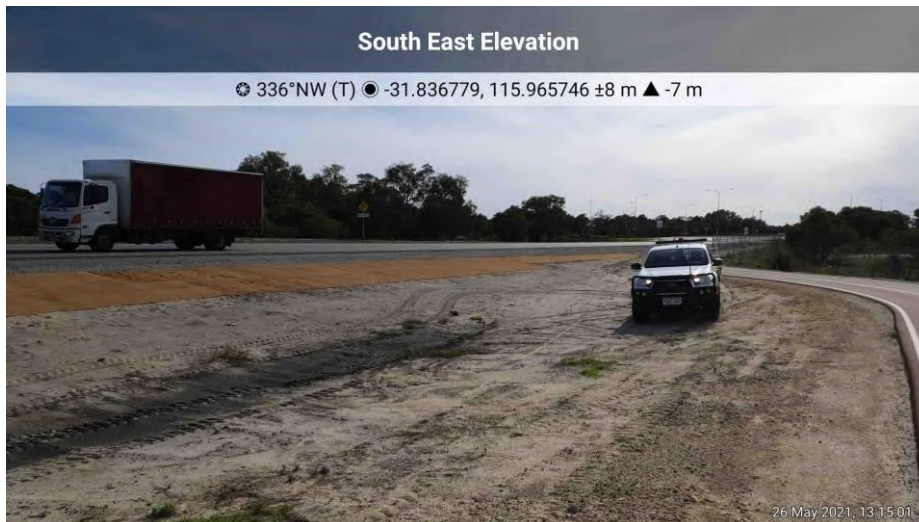


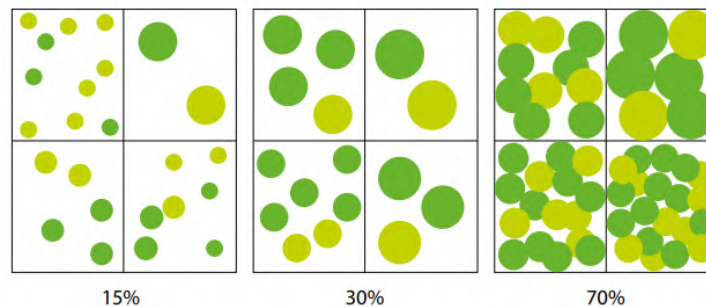
Photo ID: 7d

Plot number		Plot 7
Vegetation classification	Pre-development	Excluded – Non-vegetated and Low threat (Clause 2.2.3.2 [e] and [f])
	Post-development	Excluded – Non-vegetated and Low threat (Clause 2.2.3.2 [e] and [f])
Description / justification		Low threat cultivated gardens and maintained lawns within surrounding properties and non-vegetated areas including roads, footpaths, driveways and building footprints

Appendix 2: APZ standards (Schedule 1 of the Guidelines)

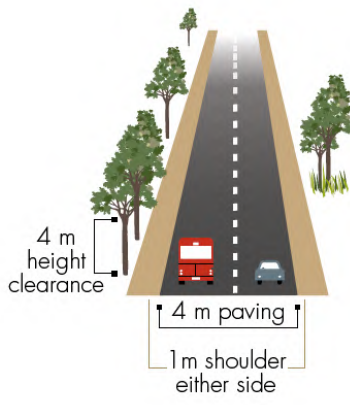
Schedule 1: Standards for Asset Protection Zones

- **Fences:** within the APZ are constructed from non-combustible materials (e.g. iron, brick, limestone, metal post and wire). It is recommended that solid or slatted non-combustible perimeter fences are used.
- **Objects:** within 10 metres of a building, combustible objects must not be located close to the vulnerable parts of the building i.e. windows and doors.
- **Fine Fuel load:** combustible dead vegetation matter less than 6 millimetres in thickness reduced to and maintained at an average of two tonnes per hectare.
- **Trees (> 5 metres in height):** trunks at maturity should be a minimum distance of 6 metres from all elevations of the building, branches at maturity should not touch or overhang the building, lower branches should be removed to a height of 2 metres above the ground and or surface vegetation, canopy cover should be less than 15% with tree canopies at maturity well spread to at least 5 metres apart as to not form a continuous canopy.

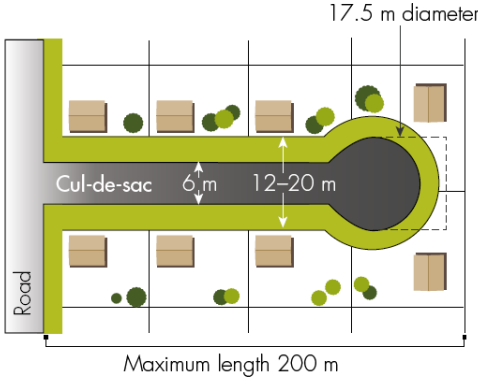


- **Shrubs (0.5 metres to 5 metres in height):** should not be located under trees or within 3 metres of buildings, should not be planted in clumps greater than 5 m² in area, clumps of shrubs should be separated from each other and any exposed window or door by at least 10 metres. Shrubs greater than 5 metres in height are to be treated as trees.
- **Ground covers (<0.5 metres in height):** can be planted under trees but must be properly maintained to remove dead plant material and any parts within 2 metres of a structure, but 3 metres from windows or doors if greater than 100 millimetres in height. Ground covers greater than 0.5 metres in height are to be treated as shrubs.
- **Grass:** should be managed to maintain a height of 100 millimetres or less.

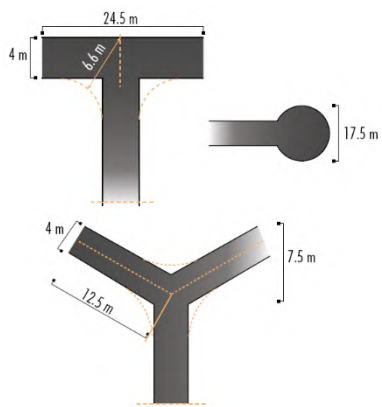
Appendix 3: Vehicular access technical standards of the Guidelines

Public roads	
Acceptable solution A3.2	A public road is to meet the requirements in Table 1, Column 1.
Explanatory note E3.2	Trafficable surface: Widths quoted for access routes refer to the width of the trafficable surface. A six metre trafficable surface does not necessarily mean paving width. It could, for example, include four metre wide paving one metre wide constructed road shoulders. In special circumstances, where eight lots or less are being serviced, a public road with a minimum trafficable surface of four metres for a maximum distance of 90 metres may be provided subject to the approval of both the local government and Department of Fire and Emergency Services. Public road design: All roads should allow for two-way traffic to allow conventional two-wheel drive vehicles and fire appliances to travel safely on them.  The diagram illustrates a cross-section of a public road. It shows a central paved area labeled '4 m paving' with a dashed white line down the center. On either side of the paving is a shoulder labeled '1 m shoulder either side'. Above the paving, a vertical dimension line indicates a '4 m height clearance'. Trees are shown on both sides of the road, and a red fire truck and a blue car are depicted on the road surface.

Cul-de-sac (including a dead-end road)	
Acceptable solution A3.3	A cul-de-sac and/ or a dead end road should be avoided in bushfire prone areas. Where no alternative exists (i.e. the lot layout already exists and/ or will need to be demonstrated by the proponent), the following requirements are to be achieved: • Requirements in Table 1, Column 2 • Maximum length: 200 metres (if public emergency access is provided between cul-de-sac heads maximum length can be increased to 600 metres provided no more than eight lots are serviced and the emergency access way is no more than 600 metres) • Turn-around area requirements, including a minimum 17.5 metre diameter head.
Explanatory note E3.3	In bushfire prone areas, a cul-de-sac subdivision layout is not favoured because they do not provide access in different directions for residents. In some instances it may be possible to provide an emergency access way between cul-de-sac heads to a maximum distance of 600 metres, so as to achieve two-way access.

Cul-de-sac (including a dead-end road)	
	Such links must be provided as right of ways or public access easements in gross to ensure accessibility to the public and fire services during an emergency. A cul-de-sac in a bushfire prone area is to connect to a public road that allows for travel in two directions in order to address Acceptable Solution A3.1. 

Private driveway longer than 50 metres	
Acceptable solution A3.5	A private driveway is to meet all of the following requirements: • Requirements in Table 1, Column 3 • Required where a house site is more than 50 metres from a public road • Passing bays: every 200 metres with a minimum length of 20 metres and a minimum width of two metres (i.e. the combined width of the passing bay and constructed private driveway to be a minimum six metres) • Turn-around areas: designed to accommodate type 3.4 fire appliances and to enable them to turn around safely every 500 metres (i.e. kerb to kerb 17.5 metres) and within 50 metres of a house • Any bridges or culverts: are able to support a minimum weight capacity of 15 tonnes • All-weather surface (i.e. compacted gravel, limestone or sealed).
Explanatory note E3.5	For a driveway shorter than 50 metres, fire appliances typically operate from the street frontage however where the distance exceeds 50 metres, then fire appliances will need to gain access along the driveway in order to defend the property during a bushfire. Where house sites are more than 50 metres from a public road, access to individual houses and turnaround areas should be available for both conventional two-wheel drive vehicles of residents and type 3.4 fire appliances. Turn-around areas should be located within 50 metres of a house. Passing bays should be available where driveways are longer than 200 metres and turn-around areas in driveways that are longer than 500 metres. Circular and loop driveway designs may also be considered. These criteria should be addressed through subdivision design. Passing bays should be provided at 200 metre intervals along private driveways to allow two-way traffic. The passing bays should be a minimum length of 20 metres, with the combined width of the passing bay and the access being a minimum of six metres. Turn-around areas should allow type 3.4 fire appliances to turn around safely (i.e. kerb to kerb 17.5 metres) and should be available at the house sites and at

Private driveway longer than 50 metres	
	500 metre intervals along the driveway. 

Technical requirement	1	2	3	4	5
	Public road	Cul-de-sac	Private driveway longer than 50 m	Emergency access way	Fire service access routes
Minimum trafficable surface (m)	6*	6	4	6*	6*
Horizontal distance (m)	6	6	6	6	6
Vertical clearance (m)	4.5	N/A	4.5	4.5	4.5
Maximum grade <50 m	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 crossfall	1 in 33	1 in 33	1 in 33	1 in 33	1 in 33
Curves minimum inner radius	8.5	8.5	8.5	8.5	8.5
* Refer to E3.2 Public roads: Trafficable surface					



Appendix 4: City of Swan Firebreak Notice

Fire Season Guide

2020/21

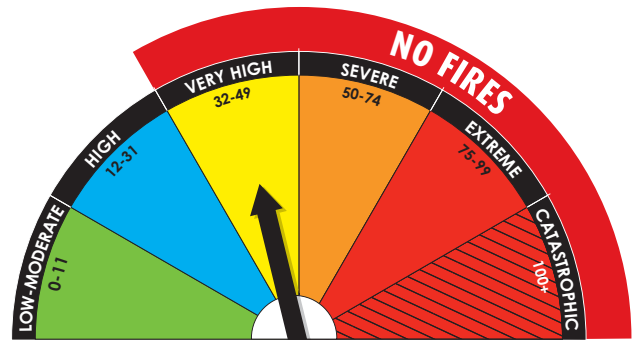


Fire season quick guide

BURNING RESTRICTIONS					
RESTRICTED BURNING PERIOD		PROHIBITED BURNING PERIOD		RESTRICTED BURNING PERIOD	
Permits Required to Burn		Burning Prohibited		Permits Required to Burn	
From Oct 1	Until Nov 30	From Dec 1	Until Mar 31	From Apr 1	Until May 31
Dates may be altered according to seasonal conditions. Any changes will be advertised at www.swan.wa.gov.au/fire					
All burning is prohibited on days where:					
• the Fire Danger Rating is very high or above or; • a Total Fire Ban is declared or; • a Harvest and Vehicle Movement Ban is declared.					
FIREBREAKS AND HAZARD REDUCTION REQUIREMENT PERIOD					
INSTALL BY NOVEMBER 1			MAINTAIN UNTIL APRIL 30		
Burning is prohibited on land less than 2000m ² . Exemptions are listed on page 8.					

Call 000 for all fires and life threatening emergencies.

Important contacts



Current Fire Danger Rating is provided daily on the Bureau of Meteorology’s Perth forecast at www.bom.gov.au and at www.emergency.wa.gov.au

City of Swan

Fire Information - 9267 9326
General enquiries - 9267 9267
or visit www.swan.wa.gov.au

Department of Fire & Emergency Services

Emergency information line (alerts and warnings):
13 33 37 or www.emergency.wa.gov.au

Total Fire Ban information line:
1800 709 355 or www.emergency.wa.gov.au

General fire safety information:
www.dfes.wa.gov.au

City of Swan Bushfire Hazard Regulations

Property owners are advised to read and familiarise themselves with the Annual Fire Hazard Reduction Notice contained on pages 11-23 of this booklet and ensure that requirements contained within the notice are carried out and maintained during the regulated firebreak periods. Property owners who are unsure of their responsibilities may contact the City of Swan for further information.

This booklet includes information on:

- Fire safety on your property
- Asset protection zone
- Bushfire management plans
- Firebreaks and fire service access (strategic firebreaks)
- Burning restrictions
- Fire safety bans
- Fire hazard reduction notice (firebreak notice)

Fire Safety on your Property

Property owners are annually required to reduce fire hazards and install firebreaks prior to **November 1** and maintain their property in that condition until **April 30**. The bushfire hazard reduction strategies outlined below are legal requirements to reduce the likelihood and impact a bushfire may have on life, property and the environment.

Land up to 5,000m² (0.5 hectares or 1.2 acres)

- Install and maintain an asset protection zone.
- Maintain all grass to or under 10cm height.
- If your land predominantly consists of dense native vegetation, firebreaks or additional understory maintenance may be required.
- Native vegetation should be maintained at or below eight tonnes per hectare.

Land between 5,000m² and 25,000m² (0.5 - 2.5 hectares) or (1.2 - 6.2 acres)

- Install and maintain an asset protection zone.
- Install firebreaks immediately inside and adjacent to all external property boundaries. Firebreaks need to be three metres wide with a four metre vertical (height) clearance free from flammable materials and overhanging branches.
- Maintain all grass to a height of no greater than 10cm. If the land is stocked the grass must be reduced and maintained to a height of no greater than 10cm by December 1.
- Natural vegetation within 100 metres of buildings including attached and adjacent structures and essential infrastructure shall be maintained at or below eight tonnes per hectare.
- Where a property is affected by an approved bushfire management plan, property owners must still comply with all requirements in this notice and with any additional requirements outlined within that plan.

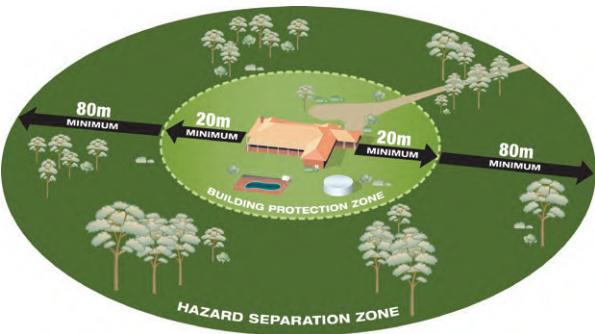
Land with an area greater than 25,000m² (2.5 hectares or 6.2 acres)

- Install and maintain an asset protection zone.
- Install firebreaks immediately inside and adjacent to all external property boundaries. Firebreaks need to be three metres wide with a four metre vertical (height) clearance free from flammable materials and overhanging branches.
- Properties over 100 hectares require additional firebreaks to divide the land into areas not exceeding 100 hectares.
- Slash or mow grass to a height no greater than 10cm immediately adjacent to firebreaks to a minimum width of three metres. If the land is stocked, this grass must be reduced and maintained to a height of no greater than 10cm by December 1.
- Natural vegetation within 100 metres of buildings including attached and adjacent structures and essential infrastructure shall be maintained at or below eight tonnes per hectare.
- Where a property is affected by an approved bushfire management plan, property owners must still comply with all requirements in this notice and with any additional requirements within that plan.

Asset Protection Zone

Asset protection zone (APZ) is a fuel-reduced area that surrounds habitable buildings and other assets. A well maintained APZ can minimise the likelihood and impact that direct flame contact, radiant heat and ember attack have on buildings in the event of a bushfire. flammable material, dry grass, stubble or bush.

The APZ extends out 20m from the external walls of an asset or building.



APZ requirements include:

- Maintain fuel loads at two tonnes per hectare or lower.
- Maintain grass at 10cm or under.
- Keep tree crowns or branches clear from overhanging buildings.
- Maintain clear separation between tree crowns.
- Under prune trees to two metres from the ground.
- Ensure shrubs taller than two metres are not located within two metres of the building.
- On sloping ground the distance is increased by one metre for every degree of downslope from the building.

APZ requirements only apply within the boundaries of the lot on which the asset is located and cannot be enforced across boundaries.

Refer to the Fire Hazard Reduction Notice on pages 18-19 of this booklet for the complete list of APZ requirements. Permanent clearing of vegetation beyond the requirements of the Fire Hazard Reduction Notice is not permitted and requires approval from the Department of Water and Environmental Regulation and the City of Swan.

Fire Management Plans

Where a property is affected by an approved bushfire management plan, property owners must still comply with all requirements of the Annual Fire Hazard Reduction Notice and with any additional requirements outlined within that plan.

Firebreaks, Fire Service Access (Strategic Firebreaks) and Emergency Access Ways

Firebreaks, Fire Service Access (Strategic Firebreaks) and Emergency Access Ways must be constructed and maintained to the standard specified in the City of Swan Fire Hazard Reduction Notice (see pages 11-23 of this booklet for details).

Type	Dimensions	Trafficable surface
Firebreak	3m wide 4m height	3m Suitable for 4 x 4 vehicles
Fire Service Access (Strategic Firebreak)	6m wide 4m height	4m Suitable for 4 x 4 vehicles
Emergency Access Way	6m wide 4m height	6m Suitable for all types of vehicles in all weather



Firebreaks, including corners, must be constructed to accomodate this vehicle.

Engaging Contractors

Landowners, including absentee landowners, must make efforts to verify contractor work is being completed to the standard required and not rely on their contractor's word; ultimately it is the land owner's responsibility to ensure their property complies with the annual Fire Hazard Reduction Notice.

Precautions when Slashing

Slashing and mowing can cause fires. These activities should not be undertaken in hot or windy weather. It is recommended that a suitable fire extinguisher is fitted to any machinery undertaking these activities.

Restricted and Prohibited Burning Times

Note: dates may be altered according to seasonal conditions. These changes will be advertised on the City of Swan's website.

All burning, including exemptions, is prohibited on days when the Fire Danger Rating is very high or above, or a Total Fire Ban or a Harvest and Vehicle Movement Ban is declared (see fire safety bans on pages 8-10 of this booklet for details).

Prohibited period

December 1 to March 31.

All burning, including garden refuse and camping fires are prohibited. Cooking fires are exempt subject to the conditions listed on page 7. Other exemptions are listed on page 8

Restricted periods

October 1 to November 30 and April 1 to May 31.

During this period you are not permitted to burn without a burning permit. You may request a permit from your local Permit Issuing Officer – see details on the inside back cover of this booklet or on the City of Swan website. Garden refuse and cooking fires are exempt subject to the conditions listed on page 7. Other exemptions are listed on page 8.

Burning a pile of garden refuse in a restricted period

- The fire must not be lit if the Fire Danger Rating is very high or above, or if a Total Fire Ban or a Harvest and Vehicle Movement Ban is declared.
- The pile being burnt does not exceed one cubic metre in size and only one pile is alight at any time.
- No flammable material within five metres of the fire.
- The fire is only lit between 6 pm and 11 pm and completely extinguished by midnight.
- At least one person capable of controlling the fire is in attendance at all times with adequate means of extinguishing the fire (e.g. garden hose that easily reaches the fire).
- You notify your neighbours of your intention to burn and the smoke from your fire does not cause a nuisance to neighbours or obscure the vision of motorists.
- You do not burn household or commercial waste, any noxious materials or any damp, wet or green material which could cause excessive smoke at any time.
- Consider registering your burn with DFES on 9395 9209 to avoid unnecessary 000 calls.

Cooking fires

Fires for the purpose of cooking are exempt from burning period restrictions subject to the following conditions:

- The fire must not be lit if the Fire Danger Rating is very high or above, or if a Total Fire Ban or a Harvest and Vehicle Movement Ban is declared.
- The fire is contained in a purpose built appliance and:
 - at a person's home; or
 - an area is set aside for that purpose by the State Authority or City of Swan
- No flammable material within five metres of the fire.
- At least one person capable of controlling the fire is in attendance at all times with adequate means of extinguishing the fire.

Burning Prohibited on Land less than 2000m²

As per Consolidated Local Law 2005; due to the impact smoke may have on densely built-up areas, burning is not permitted any time on land with an area less than 2,000m² (1/2 acre). Exemptions are listed below.

Exemptions

Exemptions include operations of a barbeque, a heater, water heater, space heater, stove, oven or incinerator. These must be fully enclosed and fired with dry wood, dry paper, synthetic char or charcoal type fuel. Suitable precautions must be taken so that no nuisance smoke arises. Causing excessive smoke is a prosecutable offence under the City's Health Local Laws.

Alternatives to Burning

Consider the environment and the impact smoke may have on the surrounding community, and whenever practical use alternative methods of fuel reduction like composting, mulching, slashing or the application of herbicides. Green waste can be disposed of at Red Hill and Bullsbrook waste transfer stations or by utilising the City's curb side collection service.

Fire Safety Bans

When a Total Fire Ban or a Harvest or Vehicle Movement Ban is declared it is illegal to light a fire or carry out any activity that is likely to cause a fire.

The responsibility remains on the individual to ensure that the activity undertaken will not cause a fire, and if a ban is currently in place.

Total Fire Bans are declared by the Department of Fire & Emergency Services (DFES) during times of extreme weather conditions or when the possibility of widespread bushfires may impact heavily on resources.

Harvest and Vehicle Movement Bans are declared by the Local Authority and limits the operation of vehicles, machinery and plant equipment near flammable material, dry grass, stubble or bush.

Similarly, conducting 'hot works' like operating abrasive cutters, welders or any other activity in the open air that may cause sparks and ignite vegetation are also not permitted during a Harvest and Vehicle Movement Ban.

When a ban has been declared **you must not:**



- Light a fire in the open air.
- Cook outside in the open air using an open fire (this includes under verandas and patios).
- Move vehicles or plant equipment in bushland or paddocks (see necessary agricultural activities*).
- Harvesting (see necessary agricultural activities*).
- Undertake 'hot works' such as welding, grinding or activity that may cause a spark or ignition (see page 10 for exemptions for prescribed activities).
- Use fireworks or hot air balloons.

When a ban has been declared **you may:**



- Use a gas cooker or barbeque with an enclosed flame on your own property or in a public recreational area designated for that purpose.
- Undertake essential feeding and watering of stock.
- Use mowers, chainsaws, line and hedge trimmers and similar machinery in built up urban environments which are clear of flammable materials or surrounded by green grass etc.
- Conduct any work that has been approved by a current Total Fire Ban exemption.

*Necessary Agricultural Activities are exempt during

- Total Fire Ban if the activities cannot be postponed until after the ban ends without consequence to livestock or crops.
- Harvest and Vehicle Movement Ban if the activities cannot be postponed without an immediate or serious risk to a person or livestock. Harvesting of crops is not permitted.

Total Fire Ban Additional Information

Activation and additional information is available on the DFES websites www.dfes.wa.gov.au and www.emergency.wa.gov.au or by calling the Total Fire Ban information line **1800 709 355**.

Information is also broadcast on ABC local Radio frequency 720AM and other media outlets.

Subject to stringent conditions, business and public authorities may continue to carry out specifically prescribed activities. Prescribed activities and conditions are available on the DFES website. These amendments mean that there is no longer a need to obtain a specific exemption from DFES to carry out these prescribed activities during a Total Fire Ban.

Exemptions for other non-prescribed activities must be obtained from DFES in writing.

Harvest and Vehicle Movement Ban Additional information

Activations and additional information is available by calling the City's Fire & Emergency Information Line on 9267 9326 and on the City of Swan website www.swan.wa.gov.au

Information is also broadcast on ABC local Radio frequency 720AM and other media outlets.

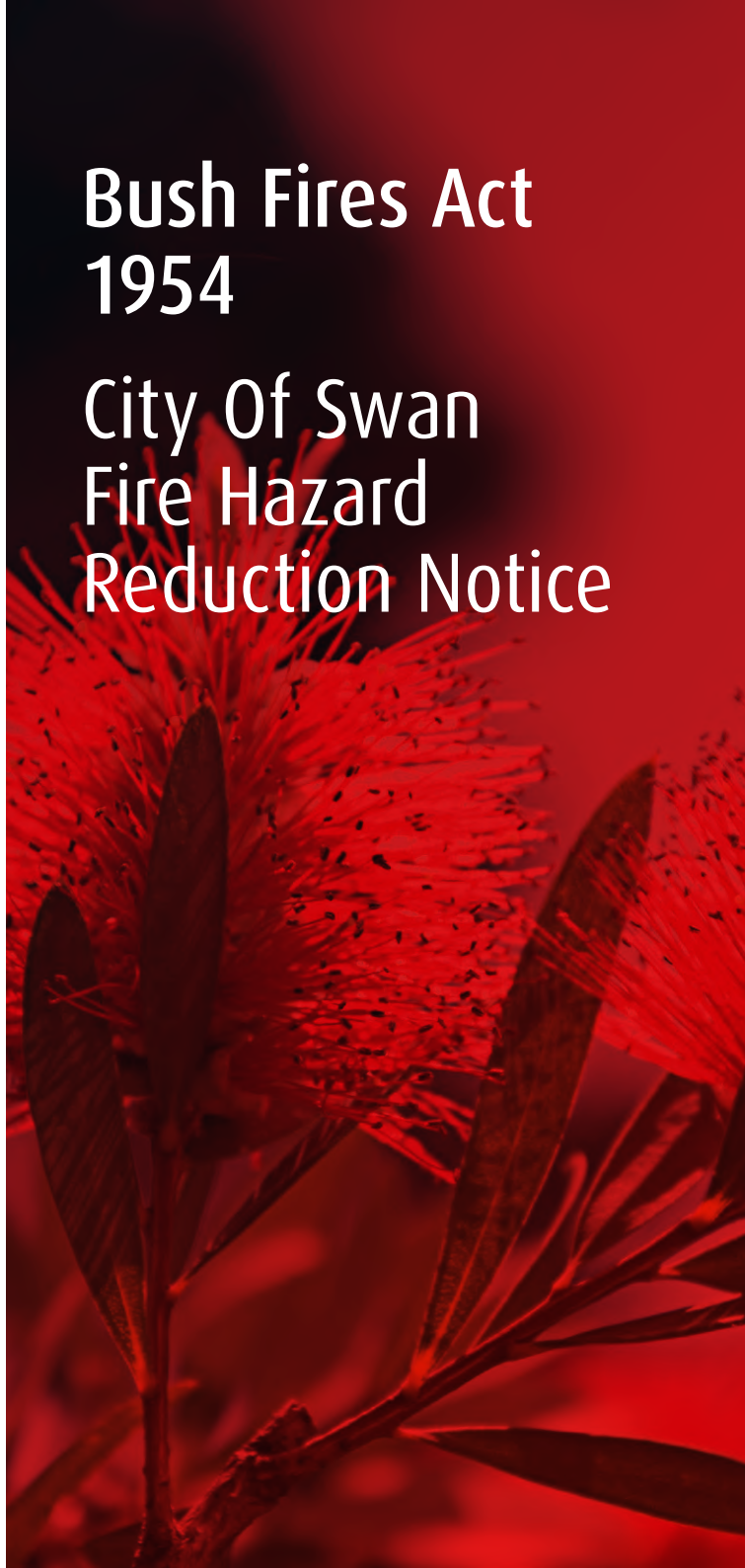
During a Harvest and Vehicle Movement Ban, vehicles may be used or operated on or across a paddock only if it is for the prevention of an immediate or serious risk to a person or livestock, and only if reasonable precautions have been taken for that activity to prevent causing a bushfire.

Penalties Apply

You could be fined up to \$25,000 or imprisoned for 12 months, or both, if you ignore or commit an offence in relation to Total Fire Bans or Harvest and Vehicle Movement Bans.

Bush Fires Act 1954

City Of Swan Fire Hazard Reduction Notice



City of Swan

Fire Hazard Reduction Notice (Firebreak Notice)

To assist in the control of bush fires, and pursuant to Section 33 of the Bush Fires Act 1954, all owners and occupiers of land within the City of Swan are required on or before the first day of November, 2020, or within 14 days of becoming an owner or occupier of land after that date, must meet the fire hazard reduction conditions described in this notice and maintain these conditions up to and including the 30th day of April, 2021.

1. All land up to 5,000m² (0.5 hectares or 1.2 acres)

- 1) Install and maintain an asset protection zone in accordance with the requirements specified in clause 13 of this notice.
- 2) Maintain all grass to a height of no greater than 10cm.
- 3) Areas of natural vegetation to be maintained at or below eight tonnes per hectare.
- 4) Where a property is affected by an approved bushfire management plan, property owners must still comply with all requirements in this notice and with any additional requirements outlined within that plan.

2. All land between 5,000m² and 25,000m² (0.5 - 2.5 hectares) or (1.2 - 6.2 acres)

- 1) Install and maintain an asset protection zone in accordance with the requirements specified in clause 13 of this notice.
- 2) Install firebreaks immediately inside and adjacent to all external property boundaries. Firebreaks need to be three metres wide with a four metre vertical height clearance free from flammable materials and overhanging branches (see section 10 in this notice for further details).
- 3) Maintain all grass to a height of no greater than 10cm.
 - a) If the land is stocked, the grass must be reduced and maintained to a height of no greater than 10cm by December 1.

- 4) Natural vegetation within 100 metres of buildings including attached and adjacent structures and essential infrastructure shall be maintained at or below eight tonnes per hectare, by passive methods of fuel reduction that does not permanently remove or reduce the quantity or occurrence of the native plants, shrubs and trees within the subject area.
- 5) Where a property is affected by an approved bushfire management plan, property owners must still comply with all requirements in this notice and with any additional requirements outlined within that plan.

3. All land with an area greater than 25,000m² (2.5 hectares or 6.2 acres)

- 1) Install and maintain an asset protection zone in accordance with the requirements specified in clause 13 of this notice.
- 2) Install firebreaks immediately inside and adjacent to all external property boundaries. Firebreaks need to be three metres wide with a four metre vertical height clearance free from flammable materials and overhanging branches (see section 10 in this notice for further details).
 - a) Properties over 100 hectares require additional firebreaks to divide the land into areas not exceeding 100 hectares.
- 3) Slash or mow grass to a height no greater than 10cm immediately adjacent to firebreaks to a minimum width of 3 metres.
 - a) If the land is stocked, this grass must be reduced and maintained to a height of no greater than 10cm by December 1.
- 4) Natural vegetation within 100 metres of buildings including attached and adjacent structures and essential infrastructure shall be maintained at or below eight tonnes per hectare, by passive methods of fuel reduction that does not permanently remove or reduce the quantity or occurrence of the native plants, shrubs and trees within the subject area.

- 5) Where a property is affected by an approved bushfire management plan, property owners must still comply with all requirements in this notice and with any additional requirements outlined within that plan.

4. Plantations

- 1) Install and maintain external and internal firebreaks, firebreaks that form compartments (cells), firebreaks and hazard reduction measures that protect neighbouring communities and essential infrastructure in accordance with the requirements of a fire management plan approved in writing by the City; or
- 2) Where no such approved fire management plan exists,
 - a) Unless the City approves an alternative plan in writing in accordance with clause 4(2)(b), install and maintain external and internal firebreaks and firebreaks that form compartments (cells), and carry out all other firebreaks and hazard reduction measures which are required in accordance with the requirements and specifications within the Department of Fire & Emergency Services 'Guidelines for Plantation Fire Protection' 2011 publication; or
 - b) If it is considered impractical for any reason to carry out the plantation requirements outlined above in clause 4 (2)(a), plantation owners and managers may apply in writing to the City to implement an alternative plan or measures in accordance with clause 4 of this notice. A Fire Management Plan may be required to be developed and submitted as part of the application.

5. Application to vary Firebreak and Hazard Reduction Requirements

- 1) If it is considered impractical for any reason to clear firebreaks in a manner or location required by this notice, or to carry out on the land any fire hazard reduction work or measures required by this notice, you may apply in writing on or before the 15th day of October, 2018 for approval to provide firebreaks in alternative positions or to take alternative measures to abate fire hazards on the land. Alternative firebreak application forms can be downloaded from the City of Swan website.

- 2) If permission is not granted in writing by the City prior to the 1st day of November, 2018 you shall comply with the requirements of this notice.
- 3) When permission to provide alternative firebreaks or fire hazard reduction measures has been granted, you shall comply with all conditions on the endorsed permit and maintain the land to the required standard throughout the period specified by this notice.
 - a) Where a property is affected by an approved bushfire management plan, property owners must comply with any additional requirements and responsibilities outlined within that plan.

6. Fuel dumps and depots

Remove all flammable material within 10 metres of fuel dumps, fuel ramps or where fuel drums, whether containing fuel or not, are stored.

7. Hay stacks

Clear and maintain a firebreak completely surrounding any haystack on the land, within 60 metres of the haystack.

8. Fire Service Access (Strategic Firebreaks)

- 1) Where under a written agreement with the City, or where depicted on an approved bushfire management plan Fire Service Access (Strategic Firebreaks) are required on the land, you are required to clear and maintain the Fire Service.

Access (Strategic Firebreaks) a minimum of six metres wide along the agreed alignment to provide restricted vehicular access to emergency services and authorised vehicles.
- 2) Fire Service Access (Strategic Firebreaks) must be free from flammable material and unimpeded by obstructions including boundary fences and gates unless approved in writing by the City.
- 3) Gates may only be secured with City of Swan Fire Service padlock.

- 4) Fire Service Access (Strategic Firebreaks) shall be graded to provide a continuous four wheel drive trafficable surface a minimum of four metres wide with a one metre shoulder on either side.
- 5) All branches must be pruned and obstacles removed to maintain a four metre vertical height clearance above the full six metre width of the trafficable surface.

9. Emergency Access Ways

- 1) Where under a written agreement with the City, or where depicted on an approved bushfire management plan, Emergency Access Ways are required on private land, you are required to clear and maintain a vehicular access way to a minimum of six metres wide along the agreed alignment.
- 2) Emergency access ways must be free from flammable material and unimpeded by obstructions including boundary fences and gates unless approved in writing by the City.
- 3) Gates on Emergency Access Ways must remain unlocked at all times.
- 4) Emergency Access Ways shall be graded and have suitable drainage to provide a minimum six metre wide continuous trafficable surface suitable for all types of two wheel drive vehicles.
- 5) All branches must be pruned and obstacles removed to maintain a four metre vertical height clearance above the full six metre width of the trafficable surface.

10. Firebreak Construction

- 1) Firebreaks are to be developed and maintained clear of all obstacles and flammable materials to create a minimum of three metres wide trafficable surface suitable for four wheel drive vehicles.
- 2) Overhanging branches must be pruned to provide a four metre vertical clearance above the full width of the firebreak surface.
- 3) Boundary firebreaks must be aligned immediately inside and adjacent to the external property boundaries.
- 4) Alternative firebreaks that are approved in writing by the City, or as depicted within a bushfire management plan approved in writing by the City, are

to be constructed to the same standard as general firebreaks and must be constructed along the specified alignment.

- 5) Firebreaks must not terminate in a dead end.
- 6) Firebreaks may be constructed by ploughing, grading, raking, burning, chemical spraying or any other approved method that achieves the required standard.

11. Driveways

Where building sites are situated more than 50 metres from a public road,

- 1) Driveways must be maintained clear of all permanent obstacles and flammable materials to create a minimum 3 metre wide trafficable surface suitable for all types of 2 wheel drive vehicles.
- 2) Overhanging branches must be pruned to provide a 4 metre vertical clearance above a minimum 3 metre width over the driveway.

12. Fuel Reduction – Natural Vegetation

- 1) Available bushfire fuels must be maintained at or below:
 - a) Asset Protection Zones - two tonnes per hectare
 - b) Hazard separation zones - eight tonnes per hectare
 *This requirement only applies where HSZs are depicted within a Fire Management Plan approved in writing by the City.
 - c) Natural vegetation - eight tonnes per hectare for areas of natural vegetation within 100 metres of buildings, attached and adjacent structures and essential infrastructure.
- 2) Passive fuel reduction within natural vegetation may be achieved by burning, raking, pruning, weed management, removal of dead materials and any other approved method.
- 3) Permanent removal or partial clearing of natural vegetation including individual or groups of native grasses, shrubs or trees may only be carried out to meet the minimum requirements of this notice.

- 4) Permanent clearing of natural vegetation structures including individual plants, shrubs or trees, that exceeds the requirements of this notice or the specifications outlined within a bushfire management plan approved in writing by the City, is only permitted in accordance with the provisions and exemptions outlined within the Environmental Protection Act 1986, or with the approval of the Department of Water and Environmental Regulation and the City of Swan.

Note: Advice and resources on how to measure and manage native vegetation fuel loads are available from the Department of Fire and Emergency Services or the City of Swan.

13. Asset Protection Zones Specification

Asset protection zones for habitable buildings and other assets must meet the following requirements:

- 1) Asset protection zones for habitable buildings must extend a minimum of 20 metres out from any external walls of the building, attached structures, or adjacent structures within six metres of the habitable building, unless varied under an approved bushfire management plan.
- 2) On sloping ground the asset protection zone distance shall increase with one metre for every degree in slope on the sides of the building/ structure that are exposed to down slope natural vegetation.
- 3) Asset protection zone requirements only apply within the boundaries of the lot on which the asset is located and cannot be enforced across boundaries.
- 4) Recommendation only - asset protection zones predominantly consist of non-flammable managed vegetation, reticulated lawns and gardens and other non-flammable features.
- 5) All grass is maintained to or under 10cm.
- 6) Fuel loads must be reduced and maintained at two tonnes per hectare or lower.
- 7) The crowns of trees are to be separated where possible to create a clear separation distance between adjoining or nearby tree crowns. The

separation distance between tree crowns is not required to exceed 10 metres. Clearing or thinning existing trees to create distances greater than 10 metres separation between tree crowns within an asset protection zone is not required or supported by this notice and requires approval from the Department of Water and Environmental Regulation and the City of Swan.

- 8) A small group of trees within close proximity to one another may be treated as one crown provided the combined crowns do not exceed the area of a large or mature crown size for that species.
- 9) Trees are to be low pruned (or under pruned) to at least a height of two metres from ground.
- 10) No tree, or shrub over two metres high is planted within two metres of a building, especially adjacent to windows.
- 11) There are no tree crowns or branches hanging over buildings.
- 12) Clear and prune scrub to reduce to a sparse density (able to walk through vegetation with relative ease with minimal deviation around trees and shrubs).
- 13) Install paths or clear flammable or dry vegetation, debris and materials immediately adjacent to the building.
- 14) Wood piles and flammable materials stored a safe distance from buildings.

14. Burning

All burning must be carried out in accordance with the relevant provisions of this notice and the Bush Fires Act 1954, Health Act 1911 and the City's Consolidated Local Laws 2005.

Prohibited period: all burning, including garden refuse and camping fires are prohibited.

Restricted period: All burning requires a permit except for the burning of garden refuse and camping fires which are subject to the following conditions:

- 1) The fire must not be lit if the Fire Danger Rating is very high or above, or if a Total Fire Ban or a Harvest and Vehicle Movement Ban is declared.
- 2) Only one fire is allowed at any time and it does not exceed one cubic metre in size.
- 3) No flammable material within 5m of the fire.
- 4) The fire is only lit between 6 pm and 11 pm and completely extinguished by midnight.
- 5) At least one person capable of controlling the fire is in attendance at all times with adequate means of extinguishing the fire.

15. Cooking Fires

Fires for the purpose of cooking are exempt from burning period restrictions subject to the following conditions:

- 1) The fire must not be lit if the Fire Danger Rating is very high or above, or if a Total Fire Ban or a Harvest and Vehicle Movement Ban is declared.
- 2) The fire is contained in a purpose built appliance and;
 - a) at a person's home; or
 - b) an area is set aside for that purpose by the State Authority or City of Swan.
- 3) No flammable material within 5m of the fire.
- 4) At least one person capable of controlling the fire is in attendance at all times with adequate means of extinguishing the fire.

16. Compliance

- 1) In addition to the requirements of this notice, further works which are considered necessary by an Authorised Officer of the City may be required as specified in writing in a subsequent notice addressed to the land owner.
- 2) Where the owner or occupier of the land fails or neglects to comply with the requirements of this notice or a subsequent notice addressed to the land owner, the City of Swan may enter onto the land with workers,

contractors, vehicles and machinery to carry out the requisitions of the notice at the expense of the land owner.

- 3) Failure to comply with this notice and subsequent written notices may result in a penalty not exceeding \$5,000, or the issue of a \$250 infringement notice and liability for any costs incurred by the City in relation to works undertaken on behalf of the land owner.
- 4) Where a property is affected by an approved bushfire management plan, property owners must still comply with all requirements in this notice and with any additional requirements outlined within that plan.

17. Definitions

'Alternative Firebreak' is a firebreak that is in an alternative position or alignment to the external boundaries of a property.

'Alternative Firebreak Application' is an application that may be made by a land owner to install firebreaks in an alternative position, or to carry out an alternative measures in lieu of general firebreaks.

'Available Fuel' is the bush fuel consisting of live and dead vegetation such as stubble, mulch, leaf litter, twigs, trash, scrub and other vegetation less than 6mm in diameter capable of carrying a running fire and will actually burn under prevailing conditions.

'City' means the City of Swan.

'Buildings, Attached and Adjacent Structures' means habitable buildings that are used as a dwelling, workplace, place of gathering or assembly, a building that is a car park, or a building used for the storage or display of goods or produce for sale by whole sale in accordance with classes 1-9 of the Building Code of Australia. The term building includes attached and adjacent structures like garages, carports verandas or similar roofed structure(s) that are attached to, or within six metres of the dwelling or primary building.

'Asset Protection Zone (APZ)' is a low fuel area that is reduced of flammable vegetation and materials

surrounding buildings and essential infrastructure to minimise the likelihood and impact that direct flame contact, radiant heat or ember attack may have on buildings and assets in the event of a bushfire. This area must extend 20 metres out from the external walls of a building or asset.

‘Bushfire Management Plan’ or **‘Fire Management Plan’** is a comprehensive plan that may be placed on the certificate of title(s) of land that has been developed as a condition of development or subdivision. Bushfire Management Plans may become out dated and it’s the responsibility of the property owner to review and keep them current. Where a property is affected by an approved bushfire management plan, property owners must still comply with all requirements in the Annual Fire Hazard Reduction Notice and with any additional requirements outlined within that plan.

‘Emergency Access Way’ is a two wheel drive trafficable, six metre wide access route to provide local residents, general public and emergency services alternative links to road networks at the end of cul- de-sacs or areas where access is limited during an emergency incident.

‘Essential Infrastructure’ or **‘Critical Infrastructure’** means assets, infrastructure, systems and networks that provide essential services necessary for social and economic wellbeing and is typically public infrastructure. Assets and infrastructure, usually of a public nature, that generate or distribute electricity, water supply, telecommunications, gas and dams are typical assets that are essential to society and are often located in, or traverse areas that are prone to bushfires.

‘Firebreak’ is an area of land cleared of flammable material (see available fuel above) to minimise the spread or extension of a bushfire. For the purpose of this notice the term firebreak is a strip of land at minimum three metres with a four metres vertical clearance, constructed to provide a 4x4 trafficable surface for emergency and authorised vehicle access. Boundary firebreaks are installed immediately adjacent the external boundaries of a property.

‘Fire Hazard’ means accumulated fuel (living or dead) such as leaf litter, twigs, trash, bush, dead trees and scrub capable of carrying a running fire, but excludes standing living trees and isolated shrubs.

‘Hazard Separation Zone (HSZ)’ if required by this notice and in accordance with a Fire Management Plan, means an area extending out from an asset protection zone a distance of 80 metres unless otherwise specified, to create a graduated fuel reduction and separation from natural vegetation.

‘Natural Vegetation’ means natural areas of forest, woodland, shrubland, scrub, mallee or mulga.

‘Passive Fuel Reduction’ means lowering the amount of available fuel that will burn under prevailing conditions by means that will not permanently reduce or modify the structure or life cycle of plant, shrub, scrub or tree communities within an treated area. This is typically achieved by undertaking a cool, controlled burn of an area during cooler, damper months, or by physical removal of built up leaf litter, dead materials, weeds and slashing long dry grasses without damaging live native plants within the area.

‘Plantation’ is any area of native or exotic planted trees that exceeds three hectares in a gazetted town site, or elsewhere a stand of trees of 10 hectares or larger that has been planted and managed intensively for their commercial and environmental value. A plantation includes roads, firebreaks and small areas of native vegetation.

‘Fire Service Access (Strategic Firebreaks)’ is a firebreak that is six metres wide established to provide strategic access and links to road networks whilst providing a wider control/ containment line to protect town sites, estates and similar exposures during bushfire operations.

By order of the Council,

MJ Foley
Chief Executive Officer
City of Swan

Permit Issuing Officers

Brigade officers are volunteers and their availability may vary in some instances.

Please plan your permit requirements early; a minimum of four days’ notice is required prior to burning. Please visit www.swan.wa.gov.au/fire for an electronic permit application or visit your local fire brigade to apply in person.

METRO

Permits are issued by Community Safety Advocates, subject to a site inspection **9267 9267**

GIDGEGANNUP EAST

Brigade enquiries **9574 6000**
Saturday 8.30 – 10am
Fire Station, Toodyay Road, Gidgegannup

GIDGEGANNUP WEST

Brigade enquiries: **9574 6536**
Saturday 8.30 – 10am
Fire Station, Toodyay Road x O’Brien Road, Gidgegannup

EAST SWAN

Brigade enquiries: **9296 1288**
Sunday 9 – 11am
Fire Station, Cathedral Avenue, Brigadoon

BULLSBROOK

Brigade enquiries: **9571 2099**
Sunday 9 – 11am
Fire Station, Chittering Road, Bullsbrook

WEST SWAN

Membership and controlled burn enquiries only: **9296 4431**
Permits within the Metropolitan Fire District are issued by the City of Swan (see Metro).



www.swan.wa.gov.au



2 Midland Square Midland
PO Box 196 Midland WA 6936
9267 9267
swan@swan.wa.gov.au

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